

CAIRNS CAMPUS MASTER PLAN 2010



Position-taking and position interact

Institutions are positioned by their history, the expectations they have of themselves and communities have of them; by their resources (financial, human, assets and facilities, location, etc.); and self-positioned by their boldness and capacity to be responsive and to change; by their business and general staff-servicing capacities, by their academic capacities. At any given time some institutions have more scope for position-taking than others. Some have more resources, capacities, imagination, desire, courage. Whatever it takes.

Professor Simon Marginson¹

1. From a Keynote Address to the Tertiary Education Facility Managers Association Conference Perth, 27-29 September 2005

CAIRNS CAMPUS MASTER PLAN 2010



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Appendix D2 – Cox Rayner, 2008, *Presentations Workshop 1 and 2*.
Appendix D3 – Cummings Economics, 2008, *James Cook University Master Plan Project Working Paper 1 Demographic Analysis & Demand for Facilities*.
Appendix D4 – Cummings Economics, 2008, *James Cook University Master Plan Project Working Part 1 Demographic Analysis*

& Demand for Facilities.

Appendix D5 – Flanagan Consulting Group a, 2009, *Access and Circulation*.

Appendix D6 – Flanagan Consulting Group c, 2009, *Landuse Planning*.

Appendix D7 – Flanagan Consulting Group b, 2009, *Services Issues*.

Appendix D8 – Golder and Associates, 2008, *Geotechnical Studies, James Cook University (JCU), Cairns Campus, Master Plan Project*.

Appendix D9 – Rubida, 2008, *James Cook University Cairns Campus Educational Overlay*.

Appendix D10 – Strategic Leisure Group, 2008, *James Cook University Cairns Campus Master Plan Recreation Opportunities Analysis*.

EXECUTIVE SUMMARY

The 2010 Cairns Campus Master Plan (the 2010 Plan) positions the campus for growth in teaching and research in the next 20 years. The motivation for preparing a new master plan at this time is a need to plan for the strong growth forecast in the University Plan for Cairns Campus, in the short to medium term, at a time when there are some basic changes to the planning regime in the surrounding Smithfield area.

Further impetus for a re-visioned campus is a desire to integrate spatial planning and place based community building, with new pedagogic modalities, advancing information and communication technologies, and moves addressing local to global environmental and social imperatives.



2. A higher resolution plan can be found at Figure 1A.

The 2010 Plan has been developed through a process of an analysis of constraints and opportunities and the preparation of development scenarios, and a consultative process with the university community and the consulting team.

Features of the plan are:

- A fundamental change in the direction of growth, now directed towards the new Smithfield Town Centre instead of being directed inland to the North and West.
- The campus divided into three main zones, the University Centre Zone, the Conservation and Research Zone and the Community Enterprise Zone. (Refer to Figure A5)
- Confirmation of the quadrangle as the university heart, but with an expectation that the centre of activity will move to the South East as the campus grows.
- A commitment to higher density of the built environment with the objectives of improving university life, reducing the footprint of developed land, maximising green space and reserving land for the future.
- Anticipated growth to 10,000 students over 20 years (and 13,000 students over 30 years). This projection is based on growth required for the Cairns campus population to catch up to that indicated by regional university benchmarks, together with growth in line with the anticipated population increase.
- Use of quality of place as a key strategy towards enhancing student experience with particular reference to attracting international students.
- Establishment of 3 (initially) centres of research excellence and 4 learning hubs. (Refer to Figure A4)
- A new entry boulevard from the East, framed by the Cairns Institute building, the Dentistry building and the University Green.
- Improved connectivity by connecting the internal road network to the future North-South connector road from McGregor Road to Panguna Street and Captain Cook Highway.
- A new sports field with a working title of "University Green" which will provide an open vista from MacGregor Road and Captain Cook Highway to prominent campus buildings.
- An emphasis on modal transport shift from single occupant vehicle to shared vehicle use, public transport and pedestrian and cycle.
- A new public transport corridor, with a busway station at the boulevard entrance. This will be a key destination on Department of Transport and Main Roads' (DTMR's) proposed new busway linking Gordonvale, the CBD and the Northern Beaches. In the longer term, consideration is being given to light rail in this corridor.
- Reservation of land forming the Community Enterprise Zone for research and development enterprises or other commercial activity with a university focus.
- Student Accommodation on the MacGregor Road frontage.
- Establishment of an exercise track around the base of the surrounding hills to be known as the "Green Arrow".
- Water course buffer zones of 15m from the high bank, a bushfire buffer zone of 60m from Smithfield Conservation Park land and land above a gradient of 15% being reserved from development.

The 2010 Plan is structured to provide a planning scheme for the campus lands, which together with JCU's Design Guidelines will provide a controlling framework for development of the built environment. It is intended that the plan be reviewed every 5 years to ensure it remains relevant to the growth trajectory for JCU in Cairns and to adjust to developments in the surrounding urban areas.

1.1 PLANNING BACKGROUND

The Smithfield land was acquired in 1991 with the initial campus layout being envisaged as follows:

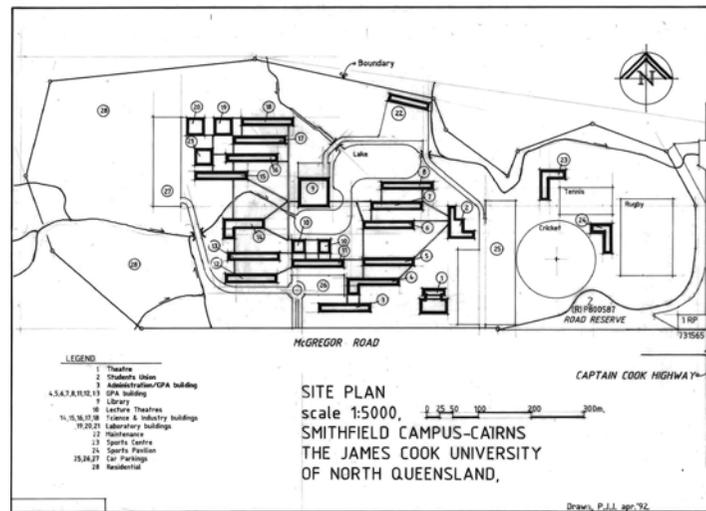


Figure 1: 1991 Campus Plan

Planning was evidently a simpler process then. From this plan, only the library and the rugby field have been built to plan. There was a subsequent subdivision into two allotments to allow for road access North from MacGregor Road to Panguna Street. By 1996 the first stage of academic buildings was complete to a fairly conventional institutional layout over the two allotments known as Lots 1 and 23, with a total land area of 49.7ha.

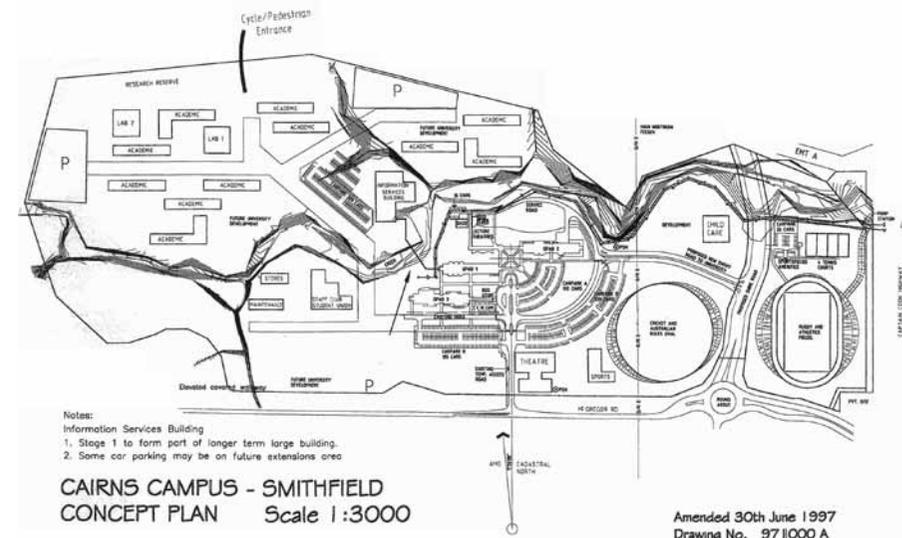


Figure 2: 1997 Plan of Development

In 2004, JCU acquired 38.4ha of land to the North, known as Lot 13, to bring the total campus area to 88.1ha.

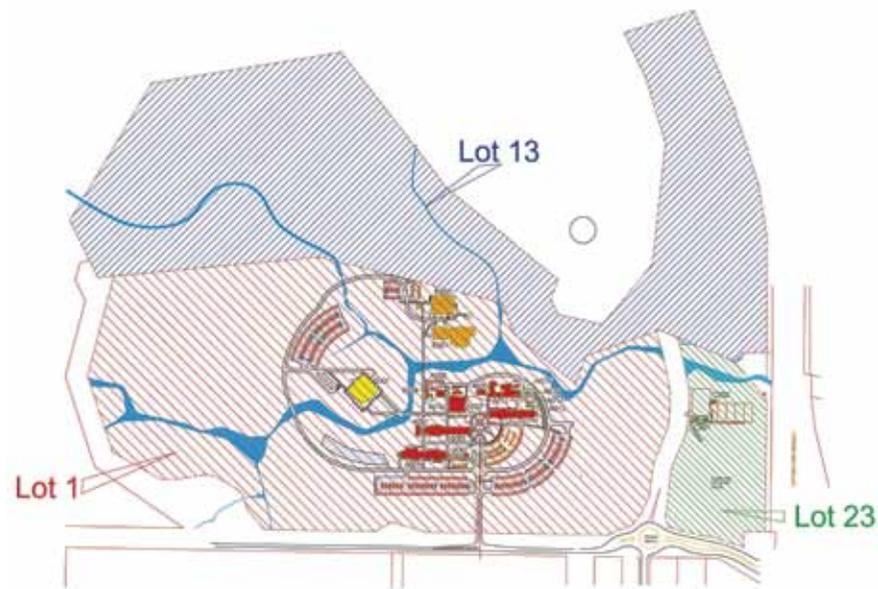


Figure 3: Land Holdings with Lot 13

Upon the acquisition of Lot 13 a new plan was developed to provide a development framework for the new land, named the Framework Plan.

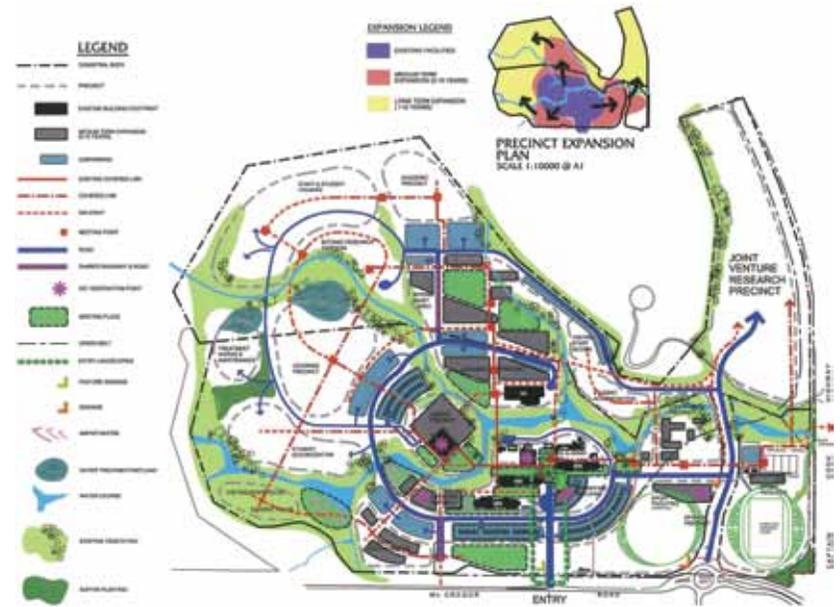


Figure 4: The Framework Plan

This framework plan envisaged a continuation of growth in academic and research facilities to the North and West, with the new highway frontage land being set down as land for commercial research and development activity.

Shortly thereafter plans began to emerge for the development of a new town centre to the East of the current alignment of Captain Cook Highway to the South of MacGregor Road, with the Highway itself to be deviated to the East. This new centre, named Smithfield Town Centre, is planned to become a community focal point for new jobs and housing north of Cairns.

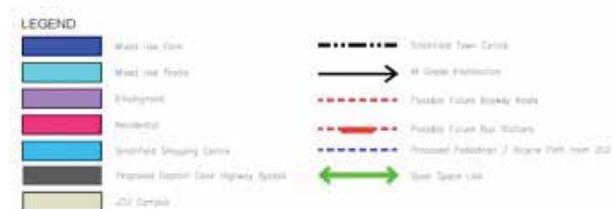


Figure 5: Smithfield Structure Plan

Cairns Regional Council planning for the Smithfield Town Centre involves a mix of commercial, retail, residential, tourist, educational, cultural, health and community facilities with a pedestrian focus. The Smithfield Town Centre will be designed around, and served by, public transport and will be accessible, attractive and friendly to all people, resident and visitor. There will be green corridor links to the Cattana Wetlands.

At the same time JCU was developing its campus development philosophy through the Discovery Rise project in Townsville, centred on the development of a much more dynamic urban campus, connected to the community through integration of the university plan to the City Plan. The overriding objective is to move from an institutional campus to an open campus, connected to the community it serves. Many universities within Australia and internationally are pursuing these objectives and JCU Cairns has a land position better than many to achieve a successful outcome.

For Cairns the obvious upshot is a clear opportunity to reconceive the campus plan to respond to, and connect to, the coming Smithfield Town Centre and surrounding community. With this in mind JCU has embarked on the preparation of the 2010 Plan for its Cairns Campus to guide the strong growth in Cairns planned for the next 20 years, in concert with the growth forecast for the surrounding community and urban environment.

The 2010 Plan will support the application for a new Ministerial Designation over Lot 13.

A diverse consulting team has been engaged to respond to the challenges of the task:

- **Flanagan Consulting Group** – Project leader, landuse, transport, infrastructure planning
- **Cox Rayner** – Urban design
- **Rubida** – Educational trends
- **Cummings Economics** – Economic and demographic analysis
- **Strategic Leisure Group** – Recreation
- **Biotropica Australia** – Environment
- **Golder & Associates** – Geotechnical
- **John Byrne** – Peer review

1.2 2010 PLAN PRINCIPLES

Guiding principles in the development of the 2010 Plan are:

- To support JCU in its strategic intent for a brighter future for life in the tropics, world-wide through graduates and discoveries that make a difference.
- To foster the development of the university community. A successful university community being much more than just staff and students, extending to include alumni, retired and former staff, business partners and friends of the university in a learning centred community with a network of collaboration, support and influence.
- The creation of an urban amenity and quality of place that ensures JCU is increasingly sought after as the university of choice for students, researchers and investors.
- The plan is to have regard for best practice in sustainability and to have a strong sustainability ethic across its four dimensions:
 - **Economic sustainability:** Regard to be had for the economic prosperity of the campus and all planning and design is to recognise and enhance the development of university related enterprise.
 - **Ecological sustainability:** JCU is a leading proponent of Ecological Sustainable Design (ESD) in the tropics and the plan is to respond to this through emphasis on energy efficiency, water sensitive urban design, strong pedestrian and cycle networks, planting to suit the tropical environment, bio retention and habitat preservation.
 - **Social sustainability:** To be achieved through community engagement, integrated planning, affordable living, equity of access and diversity rather than enclaves.
 - **Cultural sustainability:** By fostering cultural identity and diversity, protecting and enhancing cultural heritage and building greater civic identity.
- Planning for increased density of development in well conceived urban settings as means of achieving this quadruple bottom line sustainability.
- A sense of place that will encourage students to spend more time on campus. There are countervailing trends affecting the numbers of students on campus, IT/AV is enabling students to work away from campus, whilst the trend to collaborative group learning requires extended on-campus work, frequently in less formal social spaces.
- To connect the surrounding communities through the built environment by either blurring the line between institution and community, or by development which incorporates the wider community into the university community.
- To connect with the natural world through generous green areas and wildlife corridors connecting the campus to its surrounding rainforest from the heart of the campus.

1.3 HIERARCHY OF PLANS

A hierarchy of plans describes the different types of plans, from broad to specific, that are used in the planning process:

- The JCU Cairns Master Plan fits within a broader planning context and is the overarching, strategic planning document that gives structure and guidance to the more detailed Precinct Plans and Guidelines. The Master Plan identifies zones and the development intent for the Cairns Campus as a whole.
- The Precinct Plans are used to provide finer grained planning for specific areas within zones.

The following diagram illustrates the relationship between these planning elements.

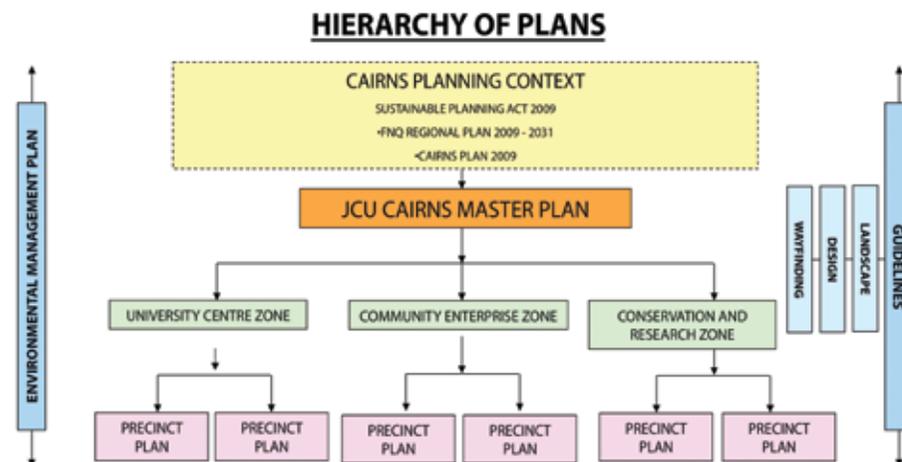


Figure 6: Hierarchy of Plans

1.4 THE 2010 PLAN STRUCTURE

The 2010 Plan is divided into 4 parts:

- Master Plan;
- Appendix A – Context (which includes a Site Context, an Opportunities and Constraints Analysis and an Issues Analysis);
- Appendix B – Process (which includes information in relation to the Project Team and the outcomes of the workshops held in regard to the Preliminary Master Plans); and
- Appendix C – Studies (which includes all of the supporting studies which guided the preparation of the Master Plan).

Appendices A, B and C comprise separate documents and are available upon request from JCU's Facilities Management Office.

This part of the 2010 Plan, the Master Plan, comprises the following sections:

- Introduction (section 1);
- Statement of Intent (section 2);
- The Master Plan (section 3);
- Growth Assumptions (section 4);
- Overlays (section 5); and
- Implementation Strategy (section 6).

Development of the 2010 Plan was guided and informed by James Cook University's Statement of Strategic Intent.



OUR INTENT

A brighter future for life in the tropics, world-wide:

- We will focus our energies on advancing northern Queensland and northern Australia, while looking for our work to benefit the tropics world-wide
- We will work with business, industry, government and the community to create lasting intellectual, cultural, social, health, environmental and economic benefits for our region and beyond
- We will produce graduates with the expertise and intellectual curiosity required for sustainable development of our communities, and we will conduct research to provide the knowledge and understanding needed to meet the challenges facing northern Australia and the tropics world-wide
- We will embrace the communities we serve and engage with them at all levels, sharing a sense of pride in the University's achievements



OUR PURPOSE

Graduates and discoveries that make a difference

- Our staff, students and alumni are proud of James Cook University's reputation as a provider of high quality education and world-class research
- Our key responsibility is to our students. We aim to inspire them to make a difference in their fields of endeavour and in their communities
- Discoveries derived from high quality and high impact research are the hallmark of our endeavours
- We offer our students a comprehensive range of courses and opportunities to work with world-class researchers in areas of special relevance to the tropics
- Our University is about people and place, and we adopt new methods, new approaches and new technologies to help our students develop the skills, abilities and knowledge base they need to succeed
- We bring a diverse array of knowledge, skills and experience through our staff and the broader community to fulfil the potential of our University

OUR VALUES AND BELIEFS

Shared values and beliefs that underpin our action

- We recognise that knowledge has the power to change lives
- We value excellence and authenticity
- We recognise that a sustainable environment is central to our lives and our work
- We uphold our commitments
- Our students are at the heart of our university
- Our staff act with integrity in a community that values and respects them
- We are committed to working towards the achievement of genuine and sustainable reconciliation between Aboriginal and Torres Strait Islander peoples and the wider community
- We play a critical role in igniting and supporting a passion for learning in our community
- We are enriched by and celebrate our communities' diversity

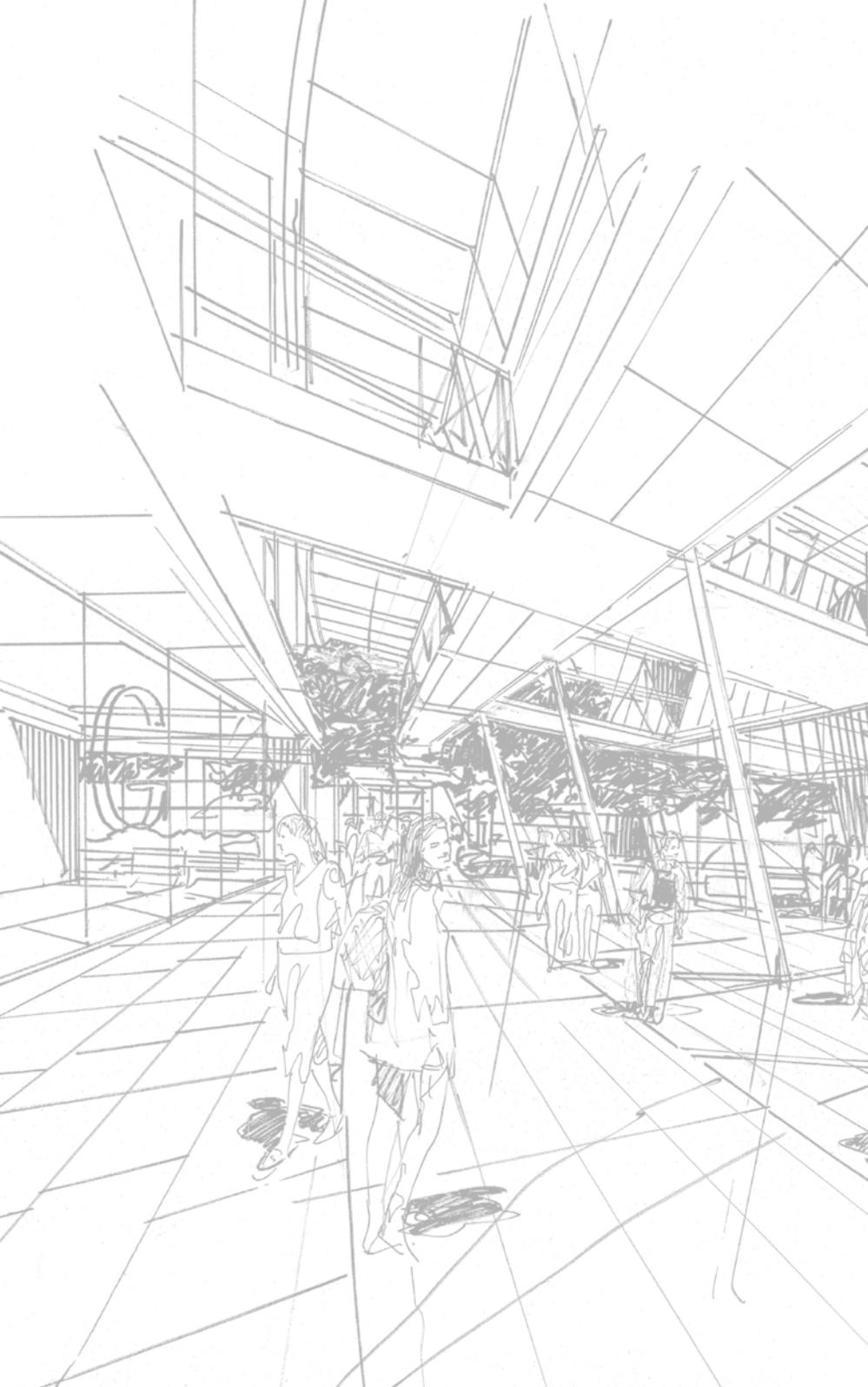
James Cook University, 2010, www.jcu.edu.au

To achieve its statement of intent James Cook University (JCU) is committed to the following for the Cairns Campus in the future:

- establishing JCU in Cairns, the region and internationally as a tropical university of excellence and a leader in education and research;
- working with business, industry, government and the community to create a highly valued tertiary and research facility at the Cairns Campus;
- encouraging the development of partnerships with entities to value add to:
 - the core educational and research facilities it already has in place;
 - complementary functions such as social activities, public support, cultural and sporting, residential and conference accommodation, together with a range of commercial and ancillary activities; and
- establishing educational, social, cultural and economic interests together to create an integrated community for the Cairns Campus.

Implementation of the 2010 Plan will involve:

- establishing quality of place as the primary design driver towards developing a tropical campus of international renown;
- promoting Ecologically Sustainable Development (ESD):
 - achieving a balance of economic, social, cultural and environmental considerations;
 - minimising any impacts on the environment and adverse impacts on JCU and the wider community;
 - aspiring to a neutral carbon footprint;
 - implementing environmentally sensitive and innovative urban design;
- increasing the level of interaction with the wider community through design practice that opens the campus to the Cairns community;
- adopting energy efficiency practices and minimising JCU's contribution to:
 - climate change;
 - green house gas emissions;
- implementing land efficiency via:
 - a sustainable settlement pattern;
 - consolidation of development;
 - increased densities of development;
 - development of mixed land uses;
 - built form that is an appropriate scale and size to minimise resource use;
- built form that capitalises on the attributes of the environment;
- incorporating transport efficiency through:
 - transit oriented development;
 - accessibility;
 - reliability;
 - connectivity;
 - legibility;
 - close proximity to transport infrastructure;
- creating employment with:
 - diverse economic activities;
 - a level of self sufficiency;
- minimising cost through economies of scale;
- achieving equity through:
 - accessibility;
 - reliability;
 - affordability;
 - choice;
 - cultural diversity; and
 - creating amenity in a healthy, liveable and safe environment.



Shifts in teaching and learning modes in recent decades, changing student demographics and increasingly challenging funding mechanisms have necessitated a reconsideration of the nature of a university campus. In turn, this has precipitated a *thoughtspace* that questions some of the basic fundamentals of existence – which, whilst probing beyond the traditional core business of teaching, learning and research, actually returns us to a sphere of concern that has distinguished new moves in campus planning:

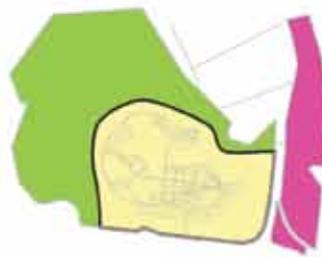
- What is a university all about?
- What can a campus bring to light and to life that is not available outside its physical boundaries?
- What should a university experience afford?
- What sort of future is the university trying to facilitate, and how can its campus contribute to that?
- What are we about – what is our point of difference?
- What is quality of life and can universities contribute to it?
- Can, and how can, universities and their campuses lead by example?
- What do we need our campuses to be in order to meet the above?

The 2010 Plan opens the door to such considerations, considerations that have been the focus of James Cook University's vision of reinvigoration and its moves to see the realisation of a knowledge community on campus.

These questions underpin the development of the plan, which is at times purely technical in its enquiry, but always considering the above in its output.

The 2010 Plan is structured to provide a controlling framework for future development proposals in conjunction with James Cook University's Design Guidelines.

- Overlay Legend**
- Community Enterprise
 - Conservation & Research
 - University Centre



ZONES OVERLAY
SCALE 1:2500 @ A1



FIGURE A1
CONCEPT PLAN



The preferred option for the 2010 Plan is given on page 14. Primary features of the plan are as follows:

3.1 ZONES

The zones identify areas of similar or compatible land uses and identify dominant land uses. The Master Plan provides for three development zones:

University Centre Zone (yellow)

The zone for traditional university activity comprising:

- the Academic Core of teaching and research buildings;
- commercial facilities such as childcare, small retail and financial institutions;
- student accommodation;
- a public space of high amenity and sense of place at the campus heart; and
- University services.

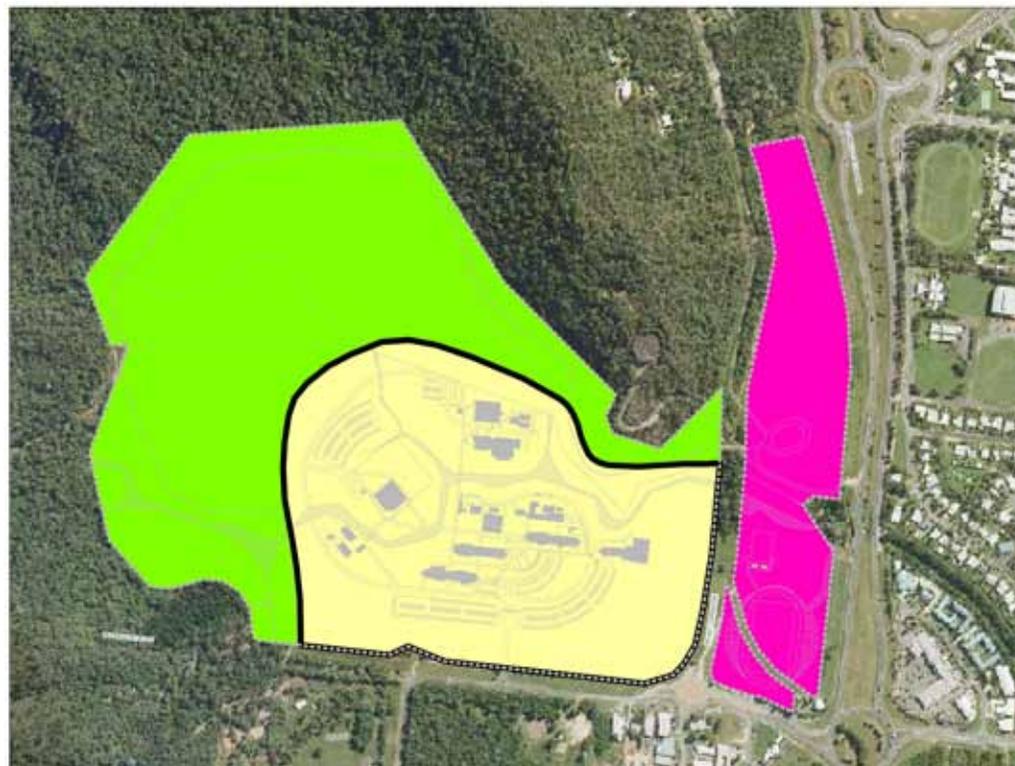
Community Enterprise Zone (magenta)

This zone, to the east of the proposed MacGregor Road to Panguna Street connector, provides for partnerships, collaborations and private investment, for education, research and development.

Conservation and Research Zone (green)

An area for conserving the environmental values of the land, conducting education and research and enjoying passive and active recreational activities. Particular uses would include:

- conservation in the forested area at the base of the range;
- modest scale agricultural or forestry research plots; and
- additional sports fields as required in future.



3.2 PRECINCTS

Precincts divide the zones further and provide the detailed planning outcomes for specific localities in the Master Plan area. Each zone will accordingly have subsidiary precincts for land use, organisational or thematic emphasis. Precincts may well overlap in keeping with the desire for mixed land uses which encourage interaction and collaboration. Precinct Plans do not form part of the Master Plan documentation.

3.3 MASTER PLAN FEATURES

BOULEVARD

The Boulevard provides a new main entry to the campus from the East creating an East West link from the Community Enterprise Zone into the University Centre. It will provide a tree lined entry with a vista to landmark buildings and will frame views to the Range.

It will accommodate a variety of modes of transport:

- public transport;
- vehicles (at low speed); and
- pedestrian and cyclist pathways.

ACCESS ROAD

The existing road to ATFI and surrounding buildings is extended to connect to the future North-south connector road between Panguna Street and MacGregor Road and links all parts of the University for:

- ease of movement;
- increased accessibility;
- distributing traffic more evenly;
- providing better emergency entry/exit opportunities; and
- access to car parking.

WALKABLE CENTRE

The University Centre gives priority to pedestrians and cyclists, limits the movement of vehicles and increases mobility and access around JCU.

CYCLING FACILITIES

The plan encourages cycle transport to ease congestion and demand for parking, as well as to promote health and well being. Strategies include:

- dedicated cycle pathways along the Access Road;
- end of ride facilities at major destinations;
- encouraging dual use pedestrian/cycle ways through the University Centre; and
- links to external cycle ways in the local area.

SAFE CENTRE

Personal safety measures using Crime Prevention Through Environmental Design (CPTED) principles including:

- ensuring casual surveillance of all streets and public spaces from buildings and at street level;
- buildings to have windows to the street;
- no blank walls or facades on buildings;
- providing an open and clean environment;
- mixed landuses;
- a connected community with a critical mass of people;
- mixing people and vehicles;
- interconnecting main streets;
- active edges at street level;
- lighting;
- ease of movement;
- simple wayfinding to finding buildings; and
- maintaining sight lines.

PUBLIC TRANSIT LINK

The Department of Transport and Main Roads (DTMR) is planning for a public transit link through the JCU Cairns Campus for access to the north, centre and southern suburbs of Cairns. The 2010 Plan works with DTMR in developing Transit Oriented Community strategies through the proposed Bus Station, the University Green and high density mixed landuses.

INTER-SUBURBAN CONNECTOR ROAD

The 2010 Plan has a North-South road connecting Panguna Street from the North to McGregor Road providing access to the Community Enterprise Zone and linking the Community Enterprise Zone with the University Centre Zone.

CONNECTION TO THE ENVIRONMENT

The 2010 Plan creates opportunities to connect with the natural environment by:

- maximising views to the range to the West;
- activating spaces between existing buildings to interact more with the natural environment;
- providing collaborative spaces in new buildings with views to the West;
- providing views of the Range from The Boulevard (East West access road) and pedestrian covered walkways;

- providing a connected pathway around the university within the natural environment for recreational and educational use by the community. This has been given the working title of The Green Arrow.

UNIVERSITY GREEN

The 2010 Plan includes a recreational hub including a space, which may be used for formal sporting activity but also for health and fitness activity and passive recreation. The parkland setting provides for a multi use sports field and a mixed use building. The building components are flexible but to successfully activate the space would need to include elements such as a viewing platform, gymnasium, café, bar and childcare.

SENSE OF ARRIVAL

To create a significant presence and sense of arrival, the new entrance will require:

- entry statements from the Boulevard and McGregor Road entries with prominence to be given to the Boulevard as the main entrance; and
- landmark buildings which embody the character of the campus will be required at or visible from the entrances.

CAR PARKING

The plan provides for the consolidation of a car parking node in the South West of the University Centre. This parking node is within a 5 minute walk of all campus buildings. As the university expands, consideration can be given to a second parking node to the North of the Access Road, but the first priority is to be given to limiting parking provision to achieve transport mode shift away from single occupant car transport.

CONSOLIDATED DEVELOPMENT

As a general principle the plan provides for higher density land use to limit the built footprint and for improved social and community development.

GROWTH ASSUMPTIONS

The JCU Cairns Campus overall Population Growth

Assumptions are as follows:

- an increase in the population from approximately 3,500 to 10,000 students over 20 years (and 13,000 students over 30 years);
- an increase in the proportion of international students;
- gender balance;
- continuing emphasis on existing strengths of health, sciences and business;
- establishment of on site accommodation for 1,860 students (from 260); and
- growing partnerships with government, private and community entities.



The growth analysis yields an estimation that within each faculty the following growth will occur:

- Arts Education and Social Science - 2.3 times;
- Law, Business and Creative Arts - 4.8 times;
- Medicine, Health and Molecular Science - 5.9 times; and
- Science and Engineering - 5.2 times.

Growth into the future will have the following characteristics:

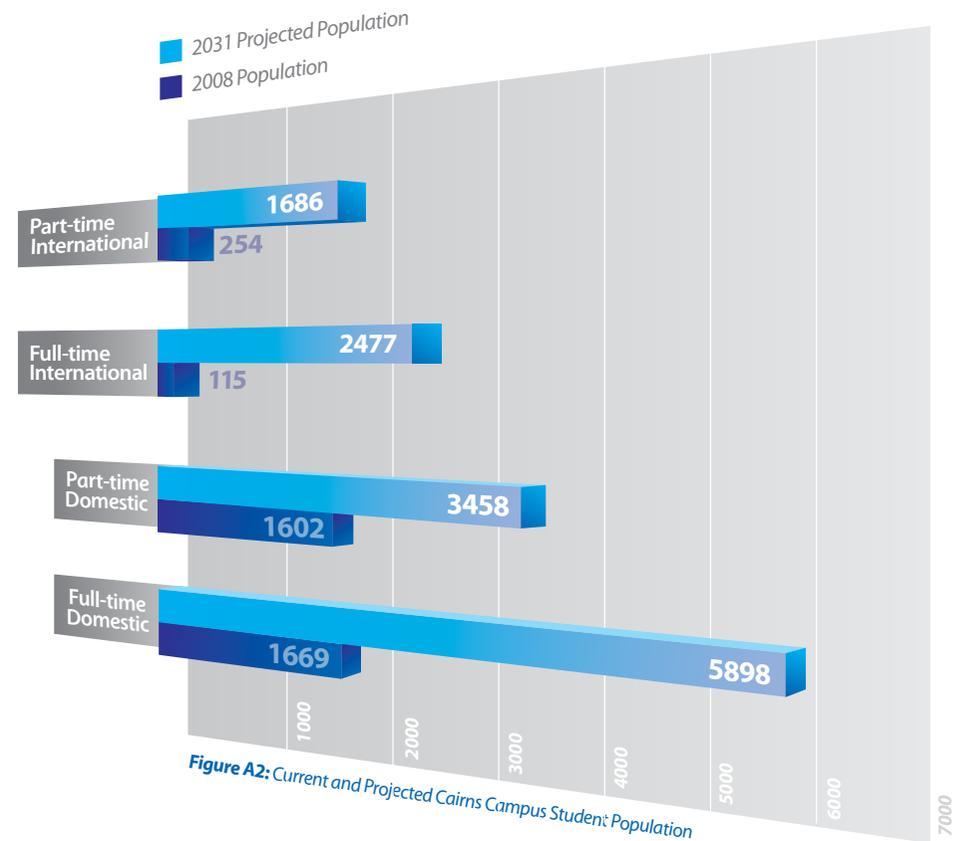
- international student numbers to rise by approximately 14 times and domestic student numbers to 3 times the current population; and
- full time student growth to be faster than part time student growth.

There will be a need for on site student accommodation to grow to approximately 1,900 student beds, comprising approximately 500 domestic (26%) and 1,400 international (74%) student beds.

There will be an increasing commercial focus with business ventures requiring facilities. The type of spaces required for business will be:

- allotments for exclusive use;
- office buildings; and
- light industrial facilities.

Partnerships that could be stimulated in the future include those with secondary schools, medical facilities, the hospitality/tourism industry, residential, public health, tropical medical research and Tropical Science and initiatives arising from the Cairns Institute.



Overlays provide extra planning direction on development in areas that may be sensitive to development, subject to specific planning constraints (such as steep slopes and bush fires) or which present opportunities for development.

The Master Plan contains six overlays, namely:

- an Environmental Overlay;
- an Educational Spaces Overlay;
- a Zones Overlay;
- an Access and Circulation Overlay;
- a Recreation and Open Space Overlay; and
- a Services Overlay.

5.1 ENVIRONMENTAL OVERLAY

PURPOSE

The purpose of the Environmental Overlay is to:

- capitalise on the natural values of the area;
- protect and conserve habitat and the environment generally;
- preserve the scenic amenity and landscape;
- create buffer zones for riparian, endangered regional ecosystems and bushfire prone areas; and
- exclude unstable or higher sloping areas from development.

GUIDELINES

- The Environmental Overlay provides a guide to environmental areas that need to be protected and conserved, including:
- the Atika³ Creek riparian area and the regional ecosystem areas - by creating buffer zones around the areas;
- the higher slope areas in the north of the campus - greater than 15% slopes to be reserved from development; and
- bushfire prevention buffer zones.

Management Plans/Programs for the environment are required to be developed for:

- riparian management;
- rehabilitation;
- stormwater management; and
- weed/pest management.

Management of Stormwater and Runoff measures requires:

- improved stormwater quality via measures such as grass channels;
- investigation, rehabilitating and monitoring areas of erosion and sedimentation of Atika Creek;
- implementation of a waste minimisation strategy to prevent waste materials from being deposited in the stormwater system; and
- introduction of stormwater quality interception devices such as gross pollutant traps.

³. Recently renamed from Chinaman Creek

5.2 EDUCATIONAL SPACES OVERLAY

PURPOSE

The purpose of the Educational Spaces Overlay is to:

- create a “place for people” to collaboratively learn within the natural environment;
- create research clusters and collaborative learning hubs;
- celebrate the natural environment;
- implement best practice;
- promote the campus image and identity;
- create a diverse, sustainable community;
- demonstrate sustainability; and
- promote interaction with the community.

GUIDELINES

The guidelines in relation to Educational Spaces are as follows:

- create Research Clusters, including:
 - centres of excellence;
 - nodes and links;
 - co-locating departments of similar functions and/or interests;
 - a range of access tenure and ownership;
 - flexible workspaces linked to research facilities;
 - emphasis for post graduate spaces and collaborative areas;

- celebrate the natural environment by:
 - establishing landscape connections to the natural environment;
 - providing corridor learning areas;
 - opening up vistas and views;
 - providing outdoor furniture, etc.
 - relocating car parks away from the native environment;
- create a Place for People by:
 - activating external areas;
 - emphasising a walkable campus;
 - providing car parking to the perimeter;
 - creating critical mass especially at ground floor level;
 - establishing ground floor functions especially retail;
 - providing collaborative learning, student services;
 - establishing residential accommodation;
- implement Best Practice by:
 - being adaptable and flexible;
 - providing innovative facilities;
 - providing high quality facilities;
 - having high visibility;
 - having a world class combination of built and natural environments;
 - providing group resources by function;
- promote the campus image and identity by:
 - creating a sense of place;
 - providing views of the tropical environment;
 - establishing landmark buildings;
 - providing showcases for work;
 - using research facilities as landmarks;
- create collaborative learning hubs by including spaces for:
 - social and learning interaction;
 - collaboration;
 - shared experiences;
 - public displays;
 - sustainability;
 - sponsorships;
 - career fairs;
- create a sustainable community, by providing:
 - an active centre;
 - residential amenity;
 - cultural diversity;
 - references to the indigenous culture in landscape planning;
 - childcare retail and support services;
 - informal spaces;
 - mixing of functions;
 - activation of edges;
- demonstrate sustainability and interacting with the community by:
 - interacting the JCU community with the environment; and
 - responding to, and implementing, technological advances.

-  Campus boundary
-  Natural Environment
-  Views and vistas to natural environment
-  Centres of Excellence: Clusters
-  Residential areas
-  Link to the outdoors: courtyards
-  Vehicle area: roads and parking
-  Activate ground floor
-  Landmark buildings: best practice
-  Learning Hubs
-  Community interface
-  Pedestrianised Campus

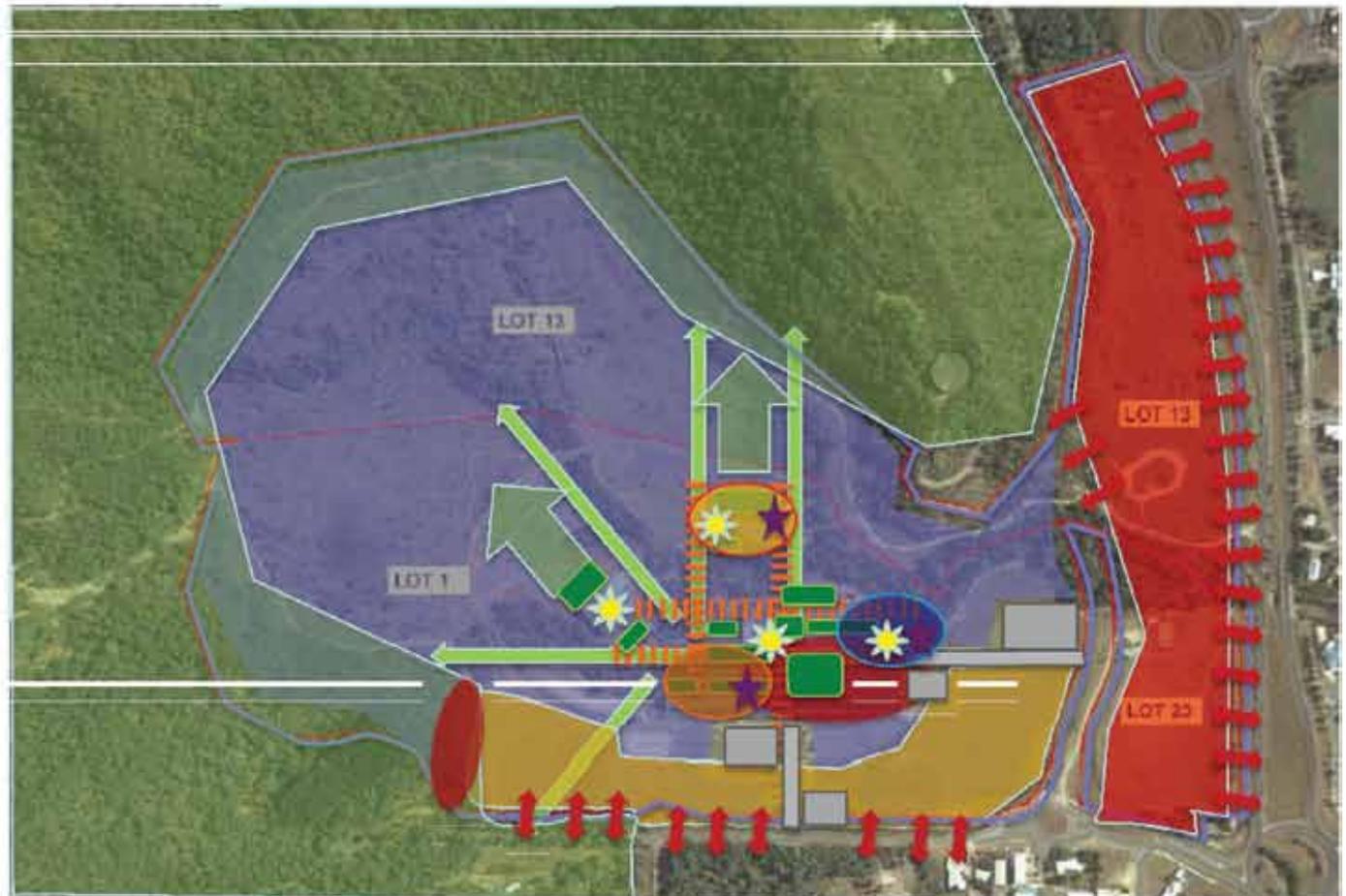


Figure A4: Educational Spaces Overlay

5.3 ZONES OVERLAY

PURPOSE

The purpose of the Zones Overlay is to:

- create an urban village maximising social interaction;
- establish a civic and social spaces network;
- provide a place of innovative and state of the art, wet tropical and environmentally sensitive urban design;
- integrate with the natural environment;
- enhance the amenity and scenic views of the mountain range;
- guide the preparation of precinct plans;
- guide the assessment of development proposals; and
- inform external stakeholders.

BUILDING DESIGN GUIDELINES FOR ZONES

The guidelines which are applicable to all zones are as follows:

- use materials sympathetic to the natural environment;
- provide innovative building and architectural types to create variety and interest;
- orientate buildings to make use of prevailing breezes;
- provide openings in buildings for air flow, views and casual surveillance;
- use shutters, shading to minimise impact of sunlight at its intensity;
- use windows and skylights for natural light;
- provide outdoor rooms blending with existing and new buildings;
- provide covered areas for shade and weather protection;
- use verandas especially at ground floor level; large overhangs and wide eaves;
- use parapets to disguise plant such air handling units;
- provide landscaping of native species with vibrant foliage and colour;
- avoid buildings with blank facades or walls;
- provide buildings that face onto the street with active frontages at ground level where people can gather/move; and
- provide tree lined streets which buildings face onto.

LANDUSE AND BUILT FORM GUIDELINES

The following Landuse and Built Form Guidelines contain the following criteria to be considered when assessing development proposals:

- Objective;
- Function;
- Type of Development;
- Land Use Activities; and
- Built Form.

All of the Landuse and Built Form Guidelines should be read in conjunction with James Cook University's Design Guidelines.

UNIVERSITY CENTRE ZONE

Objective

To establish a heart and JCU community around the quadrangle.

FUNCTION	TYPE OF DEVELOPMENT	LAND USE ACTIVITIES	BUILT FORM
Core function is providing higher tertiary educational and research functions.	Consolidating existing buildings and functions with new development.	<p>Primary: Education Research</p> <p>Secondary:</p> <ul style="list-style-type: none"> ▪ Social activities ▪ Public support ▪ Cultural & sporting ▪ Residential (multi-unit, colleges, etc.) and conference accommodation ▪ A range of commercial and ancillary activities (such as small retail, restaurants/cafes, childcare, business facilities, etc. 	<p>Providing approximately 130,000 total square metres of space for Educational and Research core functions (based on population forecast and 13.4 sqm required per EFTSL).</p> <p>Providing approximately 130,000 total square metres of space for Educational and Research core functions (based on population forecast and 13.4 sqm required per EFTSL).</p>

Areas of Character

Establishing the University Centre should create areas of distinctive character throughout the Zone, including:

- Cultural Centre – comprising the Cairns Yacht Club, Amphitheatre and Amenities facilities and Library (long term).
- Medical and Science Centre – consisting of the existing E1, Sir Robert Norman and new E3 buildings.
- University Heart – establishing higher density mixed development comprising landuses such as retail at ground floor level and educational/research, accommodation, office at higher levels. This also includes establishing the University Green.
- Car Parking Consolidation – consolidating car parking to the south; opening up existing parking areas to the East for higher end landuses.
- Consolidated Centre – integrating the existing buildings at a higher density with new development.

COMMUNITY ENTERPRISE ZONE

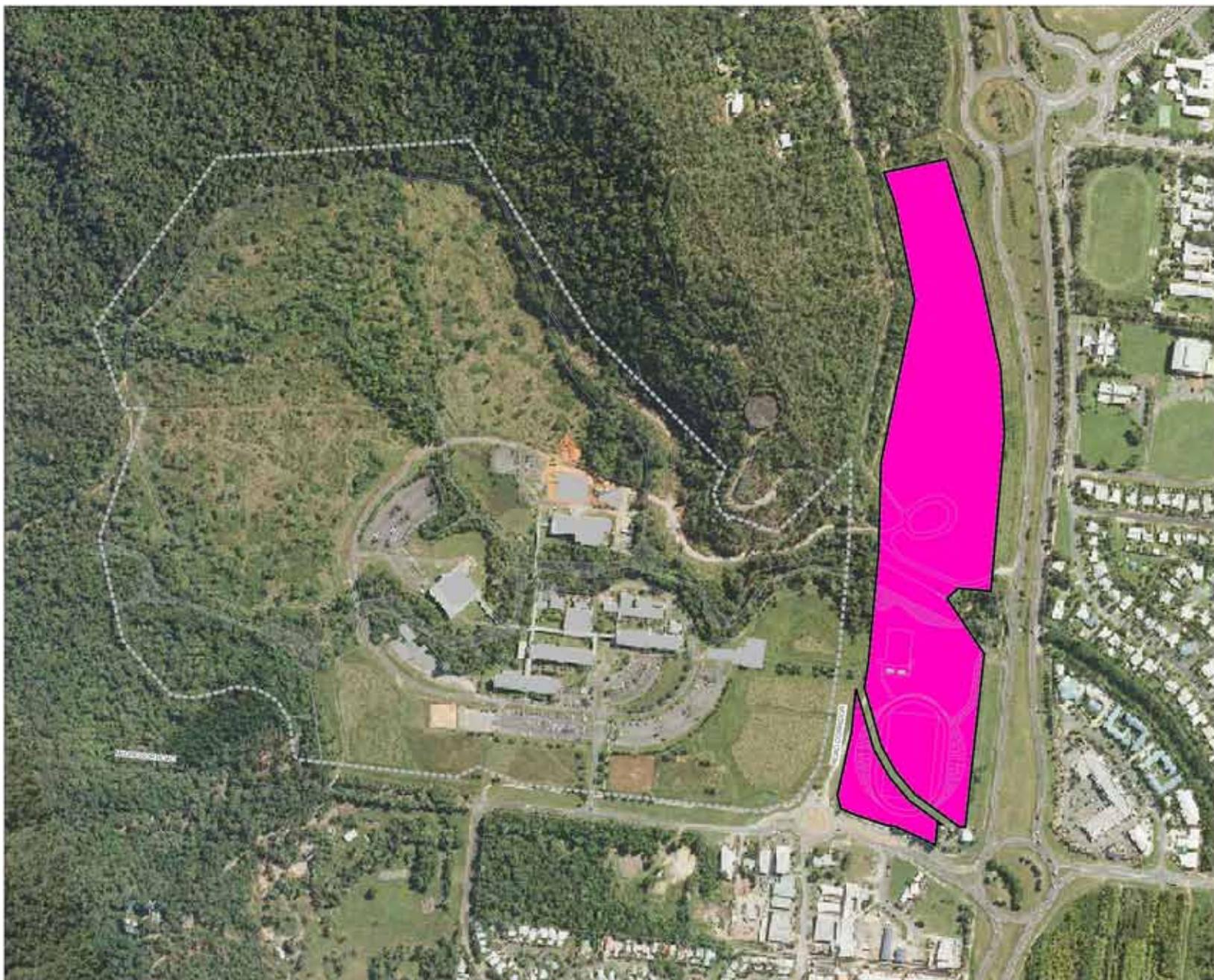
Objective

To develop commercial partnerships, alliances and investment with government, industry and the community.

FUNCTION	TYPE	ACTIVITIES / LANDUSES	BUILT FORM
<p>Core functions are for James Cook University:</p> <p>encouraging the development of partnerships, alliances, investment with entities to value add to the core educational and research facilities. establishing educational, social, cultural and economic interests together creating an integrated community.</p>	<p>Establishing new, innovative development.</p>	<p>Providing commercial activities associated with the core and complementary functions of JCU including:</p> <p>Primary</p> <ul style="list-style-type: none"> ▪ Education ▪ Research ▪ Business <p>Secondary</p> <ul style="list-style-type: none"> ▪ Business and commercial uses – business facilities ▪ Residential – multi residential ▪ Industry and associated uses – Aquaculture minor and major, intensive animal husbandry, Industry Class A – minimal impact, Business and Technology Parks ▪ Community Facilities – hospital, educational establishment, parks, place of assembly, public/local utilities ▪ Recreation – indoor and outdoor sport and entertainment ▪ Telecommunications. 	<p>Providing buildings of a height up to 5 storeys with more intense development at greater heights along the Captain Cook Highway and adjacent to DTMR's Public Transit Link.</p> <p>Subject to no adverse impact on the environment, social fabric of JCU.</p> <p>Setting back structures 15 metres from significant ecosystem and riparian areas.</p>

THE USER IS ADVISED THAT THE PRESENCE OF PLANTS OR ANIMALS MAY BE AFFECTED BY THE PRESENCE OF CERTAIN CHEMICALS. IT IS THE USER'S RESPONSIBILITY TO OBTAIN NECESSARY PERMITS AND TO OBTAIN NECESSARY INSURANCE COVERAGE BEFORE ANY WORK IS COMMENCED WITHOUT NECESSARY PRESENTATION.

Source:
 JCU, Aerial Photo, © Department Natural Resources, Wind and Water 2007



LEGEND

- Community Enterprise Zone
- Community Enterprise Zone
- Study Area - JCU Boundary

FIGURE A7:
Community Enterprise Zone Overlay

James Cook University
 Cairns Campus
 Master Plan Project

10/2010/01/01
 Author: [unreadable]

Figure A7: Community Enterprise Zone Overlay

CONSERVATION AND RESEARCH ZONE

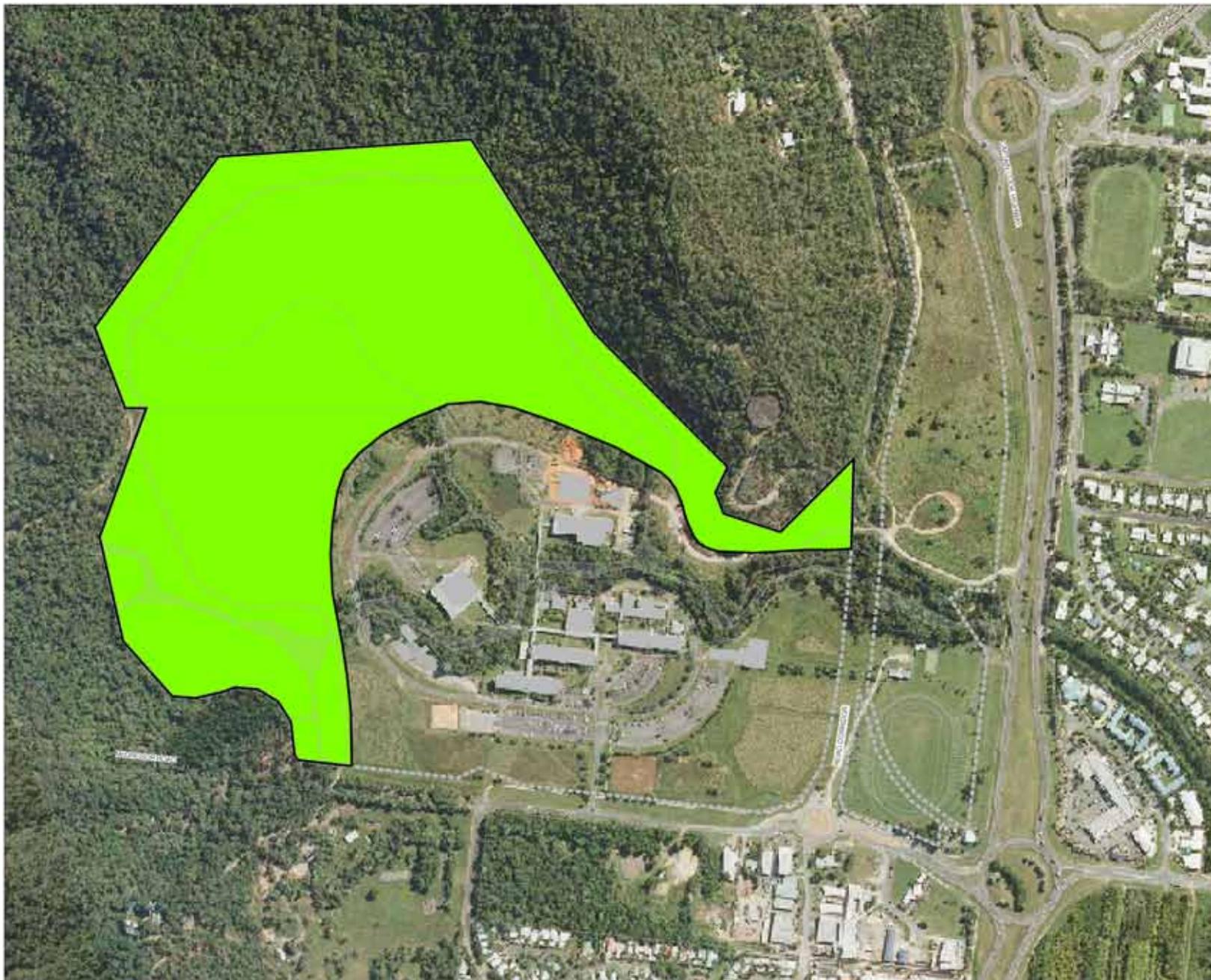
Objective

To establish sensitive development retaining the natural values of the environment.

FUNCTION	TYPE OF DEVELOPMENT	ACTIVITIES/LANDUSES:	BUILT FORM
Core function is Conserving the natural environment and utilising it as a teaching and research resource with recreational activities.	Providing development that retains, and is complementary to, the natural values of JCU Cairns Campus and implementing ecological sustainability.	Providing environmentally sensitive activities such as: Primary: <ul style="list-style-type: none"> ▪ Education ▪ Research ▪ Recreation – outdoor sport and recreation 	Providing buildings that have a height of a maximum of 3 storeys with no to very low impact on the environment. Setting back structures 15 metres from significant ecosystem and riparian areas.

NOT GUARANTEED TO BE ACCURATE AND THE PRESENCE OF PLANTING OR CONSTRUCTION SHALL NOT BE A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED. THE INFORMATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

Source:
 GIS, Aerial Photo, +100meters Natural Resources, Wind and Water 2017



LEGEND

- Conservation & Research Zone
- Study Area - JCU Boundary

FIGURE A8
 Conservation and Research Zone Overlay

James Cook University
 Cairns Campus
 Master Plan Project

28/08/2017
 Author: [unreadable] | Date: 28/08/2017

Figure A8: Conservation and Research Zone Overlay

5.4 ACCESS AND CIRCULATION OVERLAY

PURPOSE

The purpose of the Access and Circulation Overlay is to:

- reduce car dependency;
- reduce the speed of vehicles;
- shift travel modes to public transport, cycling and walking;
- lower the carbon footprint;
- encourage better accessibility for pedestrians and cyclists;
- encourage and increase public transport usage;
- encourage and implement a cycle friendly campus;
- reduce the amount of land used for car parking and roadways;
- improve the mobility and flow of movement within the university;
- improve accessibility within the university; and
- adopt a transit oriented community around the proposed Bus Station.

TARGET

The overall target for implementing the Access and Circulation purpose is as follows:

MODE OF TRANSPORT	CURRENT PATRONAGE (%)	INCREASE/ DECREASE	TARGET PATRONAGE (%)
Road	75	↓	40
Public Transport	20	↑	40
Pedestrian/ Cyclist	5	↑	20
Total	100		100

GUIDELINES

The Access and Circulation Guidelines are as follows:

Public Transport Network

- encourage Public Transport and work with DTMR and Sunbus to provide a more efficient and reliable service in the short term;
- establish, in association with DTMR, a Bus Station situated on the Public Transit Link in the longer term;
- establish a Public Transit Link and road corridor with proposed realignment in the longer term;
- establish a Transit Oriented Community around the Bus Station; and
- promote and increase Public Transport patronage from 20% to 40% of trips.

Pedestrian/Cyclists Network

- provide cyclist lanes adjacent to the existing roads and also along new roads – the Boulevard – East-West access road and the Access Road;
- provide covered walkways from entry points at McGregor Road and the Boulevard and main car park to the South West to the University Centre;
- provide cyclist and pedestrian links from the proposed Bus Station;
- provide end of trip cycle facilities at key destinations around the university;
- provide shared paths for cyclists and pedestrians within the university;
- establish and maintain the Green Arrow Track as a recreational and interpretive pathway in the forest at the base of the range;
- establish external linkages to the City of Cairns network; and
- increase pedestrian and cyclist mode share to 20%.

Road Network

- maintain road speeds at a maximum of 30 kilometres an hour and encourage shared access with cycle lanes;
- develop new roads:
 - the Boulevard – East-West access road extending from the dedicated Council Road Reserve to the quadrangle;
 - Access Road connection (using existing roadway and track to the north); and
 - inter-suburban connector road from North to South - extension of Panguna Street through to the dedicated Council Road Reserve and MacGregor Road; and
- provide landscaped boulevards and streets.

Car Parking Provision

- provide a consolidated car park to the South West of the campus and extend as required to the West in the long term;
- remove the car parks in the East of the University Centre;
- use existing car parks where possible and only provide movement impaired parking close to new buildings;
- introduce incentives for public transport, car-sharing and pedestrian/cycle transport to reduce parking demand;
- as demand rises, establish a new parking node to the North of the Access Road;
- move car parking outward from the heart of the University Centre to the periphery (but still within DTMR's 400 metre and JCU's 500 metre walking distance specification and providing covered walkways integrating with the existing network); and
- introduce permit, fee paying and time limit parking and an enforcement program, as disincentives to travelling by vehicle.



Figure A9: Access and Circulation Overlay

5.5 RECREATION AND OPEN SPACE OVERLAY

PURPOSE

The purpose of the Recreation and Open Space Overlay is to:

- provide a centre for recreation at the University Green for sport, health and fitness, passive recreation and student services;
- provide for a range of activities, including fitness exercise, field sports, court sports and running, walking and cycling networks;
- provide cafe, fitness programs, social sport, consulting rooms and change facilities as a support framework for campus and community use that mixes commercial and subsidised elements to maximise sustainable supply; and
- encourage community use and facilitate formal and informal use of facilities, increasing the integration of the campus into the wider community.

OBJECTIVES

The objectives of the overlay are to:

- provide a network for passive and active recreation;
- provide linkages internally and externally from JCU to local recreation areas;
- establish the University Green as the recreational and community services centre; and

- develop partnerships/investment with government, private and community entities.

GUIDELINES

The Guidelines in respect of recreation and open space areas are as follows:

- establish the University Green as a Recreational Centre encompassing:
 - casual and passive recreational areas;
 - active recreational areas for organised sport, education individual fitness and so on; and
 - integration with other mixed landuses in the University Centre Zone, while creating and maintaining a visible and unique University Green area on campus;
- establish Recreation facilities:
 - by integrating the existing oval and amenities with new facilities such as:
 - a small Program Pool for teaching and recreation; and
 - an Indoor Multi-functional Centre, including:
 - a multi use hall for performances, exams, sports;
 - a gymnasium;
 - courts;
 - shared club facilities;
 - showers and change rooms for recreation users and as end of trip facilities for cyclists;
 - childcare facilities;
 - a small café and bar; and
 - cycle parking and a trailhead;
- establish the Green Arrow Track and Internal Recreational Linkages by:
 - using the existing pathway around the University Campus and establishing an interactive, educational walkway for teaching, running, walking and cycling; and
 - establishing signage and pathways to the Green Arrow Track and promoting use thereof;
- link the University Green and the Bus Station by:
 - providing integrated walkways and cycle pathways to and from the Bus Station capitalising on the view to the ranges;
 - integrating the University Green facilities with the Bus Station;
- create external linkages to and from the campus via:
 - pedestrian/cycle linkages to the Cattana Wetlands, Smithfield Conservation Park, Kuranda National Park and Marlin Coast Recreation Centre; and
 - connections to the Cairns City Cycle network.

It is recommended that the following areas be allocated for each facility:

PROPOSED UNIVERSITY GREEN AREAS	
FACILITY	AREA PROPOSED (SQUARE METRES)
Gym and Fitness Complex	800
Squash Courts x 2	800
Club and Group Meeting/Function Space	400
Indoor Sports Court and Events Facility	1,200
Storage for Clubs	200
Trailhead and Bike Facilities	150
Program Pool	500
Main Oval	25,000
Amenities	200
Food and Beverage	100+
Total Facilities	3.0 hectares+

OPTIONAL OVAL IN THE WEST IF REQUIRED

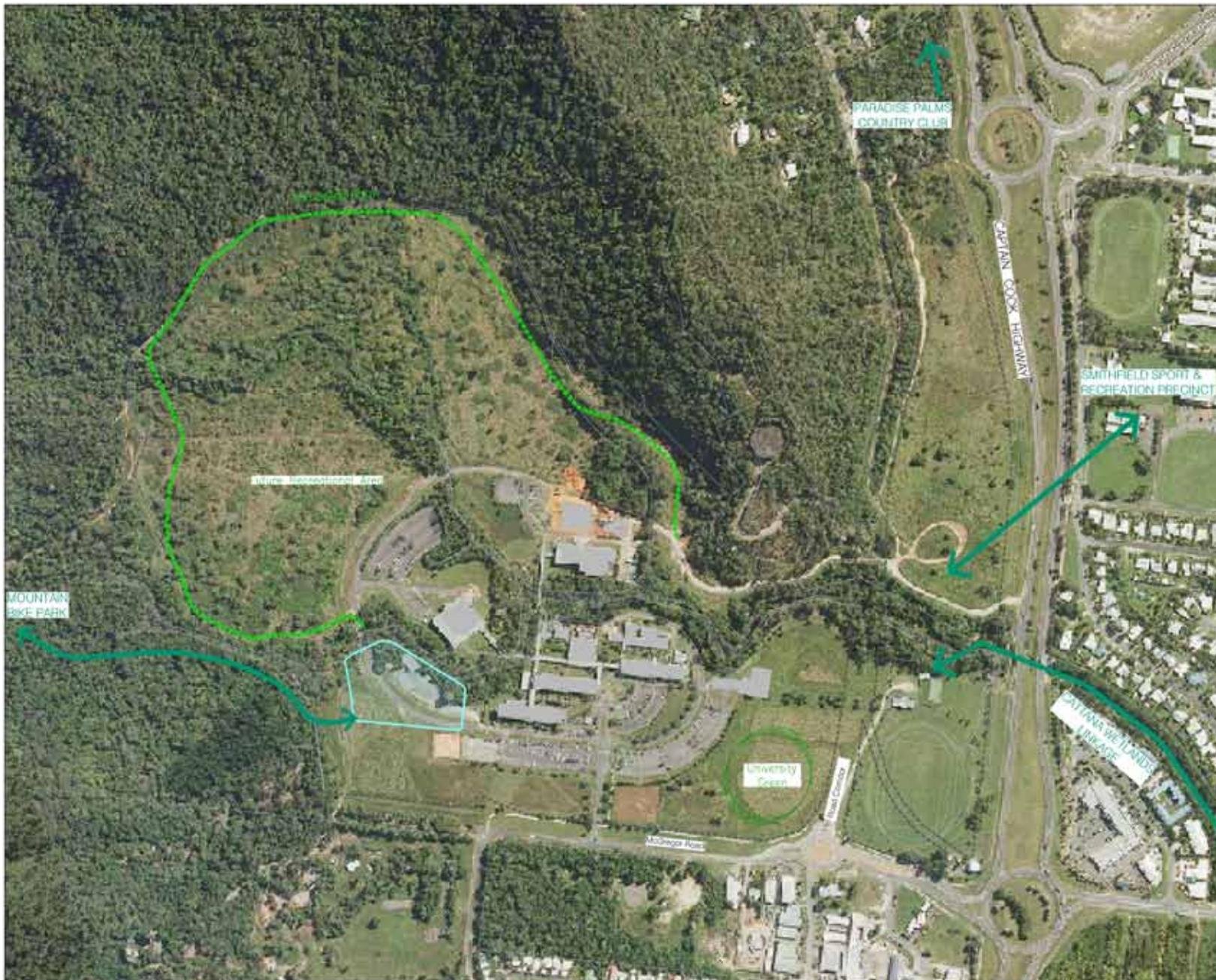
3 hectares would be required for a multi use sports field covering AFL/Cricket and rectangle field sports.

GREEN ARROW

A circuit from the University Green around the Green Arrow Track would be of the order of 3 kilometres.

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DATE: 2010
 DATE: 2010
 DATE: 2010



LEGEND

- ▭ Cultural Centre
- ▭ Recreational Limit
- The Green Arise
- - - Study Area - JCU boundary

FIGURE A10
 Recreation and Open Space Overlay

JAMES COOK UNIVERSITY **FLORIDA**

James Cook University
 Cairns Campus
 Master Plan Project

Scale: 1:5000
 Date: 2010

Figure A10: Recreation and Open Space Overlay

5.6 SERVICES OVERLAY

PURPOSE

The purpose of the Services Overlay is to:

- implement ESD principles and long term sustainable initiatives;
- facilitate the supply to consumers of reliable and accessible services through engineered services corridors and conduits with capacity for expansion and redundant links;
- minimise the use of resources;
- provide innovative and technologically advanced solutions;
- promote the health and safety of people at the university; and
- implement strategies to:
 - investigate methods that decrease the impact essential services have on the environment; and
 - investigate the adoption of new technology as it becomes available.

GUIDELINES

The Guidelines in respect of infrastructure services are as follows:

Water

- maintain the “water wise” policy ensuring the demand on the potable water supply is minimised;
- investigate the sustainable yield from the existing bore supply and the possibility of establishing additional bores on site;
- enter into discussions with Cairns Regional Council regarding accessing the wastewater reuse system proposed for the Northern Beaches as a source of non potable water supply; and
- reuse greywater on campus.

Wastewater

- investigate the feasibility of on site wastewater treatment as an economical wastewater treatment alternative and a potential source of non potable water supply; taking into account capital costs, staging, ongoing maintenance and operation costs; compared with disposal to the Cairns Regional Council reticulated sewerage network and treatment plant.

Chilled Water

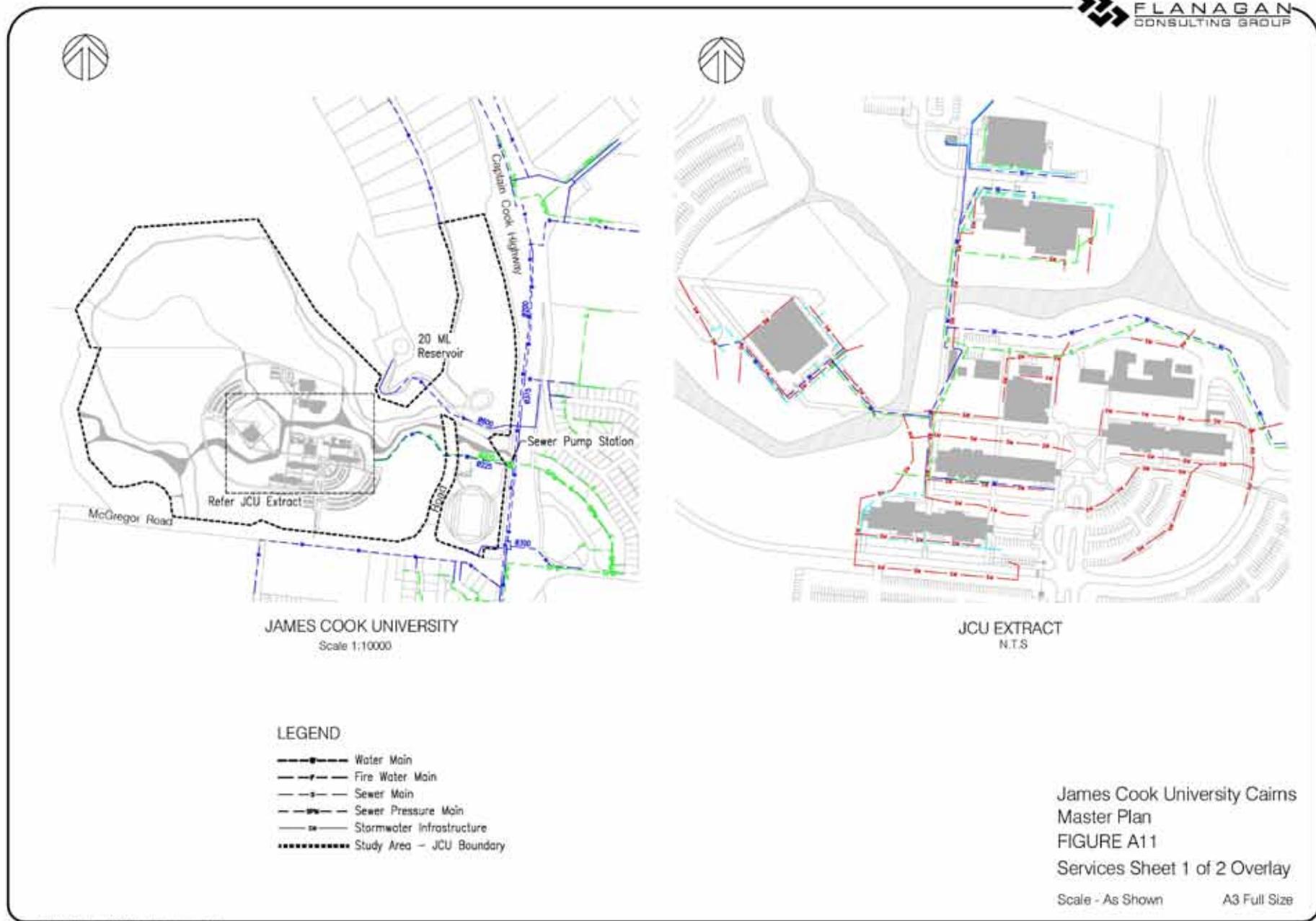
- install additional chillers and supplementary thermal energy storage tanks as expansion occurs;
- construct chilled water loop to service new buildings;
- utilise greywater in the system; and
- continue and monitor economical and environmental policies.

Energy

- maintain the adoption of building design guidelines which include energy efficiency to achieve high Green Star ratings; and
- undertake detailed investigations into the viability of alternate energy sources.

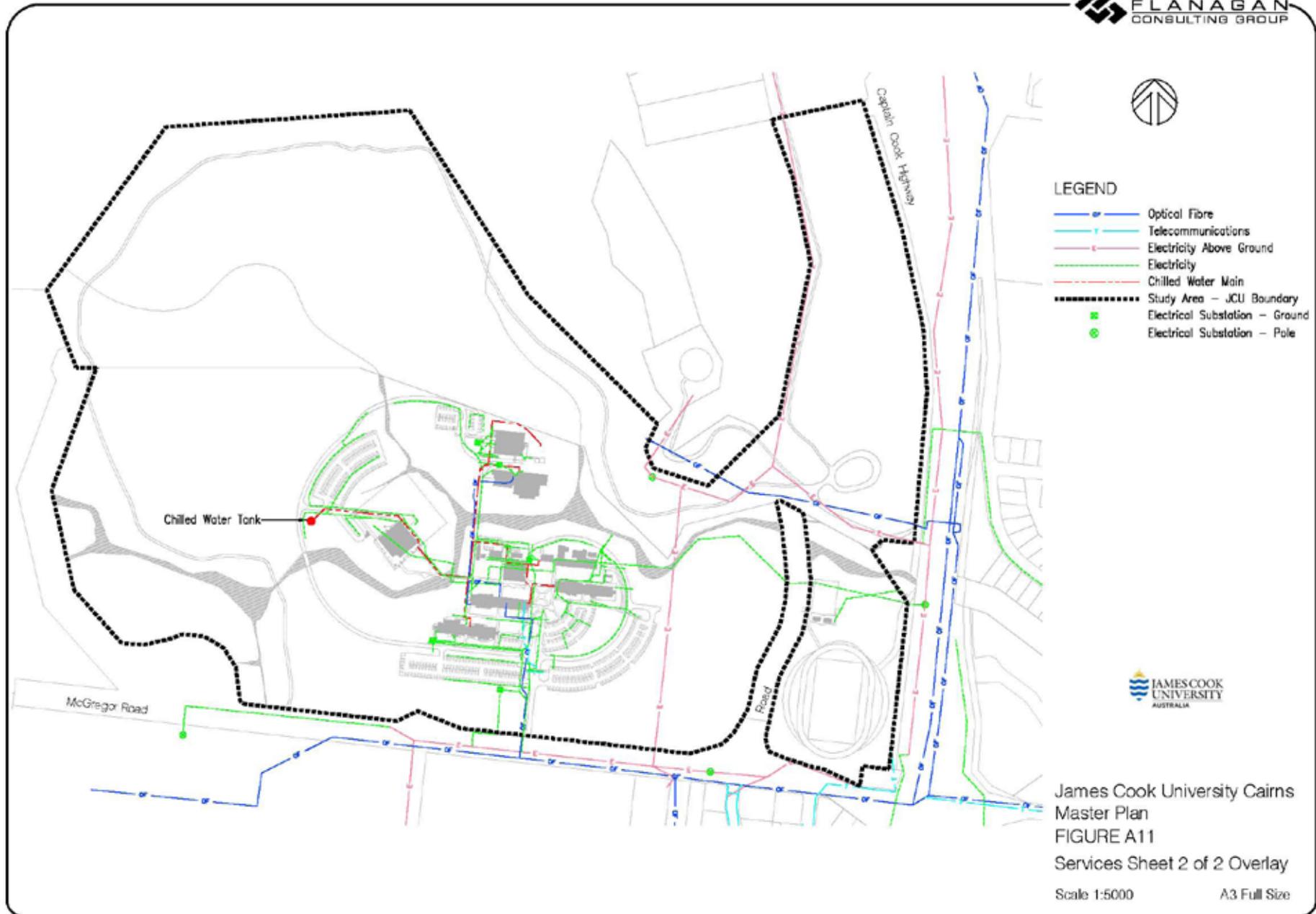
Communications

- continue to provide easily accessible communication systems;
- continue to extend wireless network on campus; and
- adopt a flexible approach to communications services planning to ensure that additional capacity to cater for future change is built into services infrastructure.



FCG ACAD No. 1823AK 25 February 2010

Figure A11: Services Overlay – Sheet 1 of 2



FCD ACAD No. 1829AL 25 February 2010

Figure A11: Services Overlay – Sheet 2 of 2

6.1 PURPOSE OF THE IMPLEMENTATION STRATEGY

The purpose of the Implementation Strategy is to provide a checklist of tasks to be undertaken to practically execute the 2010 Plan for JCU's Cairns Campus.

6.2 ACTIONS

ADOPT THE MASTER PLAN

James Cook University to adopt the Master Plan as a guide for development over the next 20 years.

INVESTIGATE THE STATUTORY FRAMEWORK

Determine the appropriate statutory framework for implementation of the Master Plan. Options include:

- extend the Ministerial Designation to Lot 13;
- revise the Ministerial Designation for Community Purposes over the Cairns Campus site to include the range of uses identified in the Master Plan and operate externally to the Cairns Regional Council's Planning Scheme;
- prepare a Local Area Plan as part the Cairns Regional Council's amalgamated *Sustainable Planning Act 2009* Planning Scheme; or

- integrate with State Government planning initiatives such a Master Planned Area designation for the Smithfield Major Activity Centre.

REVISE THE JCU DESIGN GUIDELINES

The following sections of the Design Guidelines will need to be reviewed and revised in response to adoption of the Master Plan to ensure consistency:

- space planning;
- gross floor area;
- landscaping;
- approved planting; and
- population densities.

CONDUCT FURTHER RESEARCH AND REPORTS

Environmental Management Plans

The following plans/strategies will need to be prepared:

- erosion and sediment control plan;
- water quality plan;
- weed and pest control plan;
- waste minimisation and recycling plan;
- flora and fauna survey;

- hazardous materials strategy; and
- bushfire management plan.

Cultural Heritage

Conduct an archaeological survey and develop a cultural heritage management strategy.

Crime Prevention through Environmental Design

Conduct a Risk Assessment of the JCU Campus to manage and monitor implementation of CPTED guidelines.

Journey to Work Survey

Conduct a survey to establish the mode of transport used to travel to and from JCU; and access and circulation needs.

Prepare Implementation Plans

The following specific Implementation Plans will need to be drafted detailing the timing, budget, partnership/investment strategies, specifications and so on.

On Site Accommodation Plan

Investigate and develop an implementation plan for:

- partnership/investment possibilities;
- siting;
- densities;

- types of accommodation such as traditional catered, multi-unit self catered and mixed development with upper floor apartments; and
- architectural design.

Transport Plan

Conduct a preliminary engineering study and undertake cost planning of proposed roads, pathways and car parking areas to provide access within the JCU Cairns Campus:

- the North-South intersuburban connector road (extension of Panguna Street);
- the new entry Boulevard;
- consolidated car park in the South West;
- end of trip facilities for cyclists;
- covered walkways; and
- pedestrian/cyclist pathways.

University Green - Recreation Facilities Plan

Conduct a scoping study and undertake cost planning for recreational facilities envisaged for the University Green.

Academic Building Expansion Plan

Conduct a scoping study and undertake cost planning for the new academic buildings to house the planned expansion of student numbers (including an audit of the existing buildings and outdoor spaces). The aim is to plan for academic expansion in a sequence which delivers the urban framework required to achieve the social and community development objectives.

General University Development

Undertake the following:

- Establish a landmark building in a prominent location on the Boulevard.
- Establish a Master Plan Implementation and Review Committee. The committee would meet to consider development proposal against the 2010 Plan and siting of development prior to tendering. The Committee is to include external expertise. The Committee is to provide advice as required.
- Review the plan continually, but formally every five years, to ensure the 2010 Plan is a dynamic document and is reviewed at regular intervals.

- Establish a marketing and promotional plan for development - for example, itemising and targeting organisations to partner with JCU to develop the Community Enterprise Zone, the University Centre Zone and the Conservation and Research Zone. Industries to consider are health, other educational institutions, carbon offset projects, agro forestry research and development, indigenous bush food production, technology and simulation and business.
- Examine the future use of the library. An options analysis should be conducted in regard to the future functions of the library. Suggestions have been to transform the library into other functions in the future supporting the Cultural Centre.
- Review Teaching Modes - JCU to review the existing plans and curriculum in relation to the Education Planning Principles.

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ABBREVIATIONS

The following abbreviations/acronyms have been utilised throughout this report.

CRC	Cairns Regional Council
DTMR	Department of Transport and Main Roads
EFTSL	Equivalent Full Time Student Load
ESD	Ecological Sustainable Design
FCG	Flanagan Consulting Group
JCU	James Cook University

