

Dugurrdja Precinct Master Plan - November 2023



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We acknowledge and pay our respects to the Traditional Owners of the land upon which we are constructing this facility, the Gimuy Walubara Yidinji peoples. We extend this respect to all Australian Aboriginal and Torres Strait Islander Elders past, present and future, and to other First Nations Peoples within our region.

These Planning Principles have been developed by the following Stakeholders and Consultants:

James Cook University (JCU)
Cairns and Hinterland Hospital and Health Service (CHHS)
Traditional Owners – Gimuy Walubara Yidinji
Department of Transport and Main Roads
Cairns Regional Council (CRC)
Department of State Development, Infrastructure, Local Government and Planning, (DSDILGP)
QBuild Public Works Division Queensland Government
Queensland Health
Wilson Architects - Planning
Wilson Architects - Landscape
Reel Planning - Town Planning
Bitzios - Traffic
Bornhorst and Ward - Civil and Stormwater
Hopkins Consulting - Electrical and Mechanical
WSP - Hydraulic
DSquared - Sustainability
Dot Dash - Wayfinding

1.0

Introduction

The Precinct purpose is to co-locate education, training, research and innovation activities that will generate new ideas, facilitate new partnerships and catalyse innovation across Cairns, Far North Queensland (FNQ) and Asia Pacific.

The shared organisational priorities of education, training, research and innovation, driving growth and improved community outcomes has created the opportunity for James Cook University (JCU) to partner with other like minded organisations in a joint Precinct. The Precinct will be located centrally in Cairns, but will benefit the FNQ and Asia Pacific regions.

The Precinct will be co-located with the Cairns and Hinterland Hospital and Health Service (CHHHS)' Cairns Hospital Surgical Centre as well as other developments of clinical services, education and training facilities allowing translation of research into practice; and will aim to inspire entrepreneurship and innovation through the use of digital technologies. The Precinct will enable world class research to be undertaken in Cairns that focuses on, and benefits FNQ in the tropics across sectors (including health):

- Encourage collaboration between the individuals and the organisations that engage in the Precinct.
- Minimise the creation of duplicate spaces within the Precinct, ensuring that the funding being invested in infrastructure is used to optimal effect.
- Create a welcoming environment in which people want to work, visit and collaborate.
- Delivering facilities that are aesthetically, environmentally, culturally and functionally excellent that will be inviting to community members seeking to engage with the Precinct and respectful of the Indigenous heritage of the region.

Integrate research, education and learning

The Precinct will provide opportunities for inter-disciplinary collaboration across administrative, medical, nursing and midwifery and allied health and between clinicians, researchers, educators and students. The Precinct will be part of the National Health and Medical Research Council accredited Tropical Australian Academic Health Centre (TAAHC). This will provide opportunities for translational and multidisciplinary research, and allow for better education and training across disciplines.

- 1 Co-location will create a conducive environment for innovation and better facilitate joint planning and initiatives. The research focus of the Precinct will be on the applications of technology and the Internet of Things (IoT) in multiple sectors. In addition to the applications of technology in modern healthcare, health research will also focus on advancements in primary care, Aboriginal and Torres Strait Islander health, applied models of care, and chronic complex care.
- 2 Create opportunities to improve research and understanding of traditional knowledge in health.
- 3 Increase collaboration through co-location of key partners.
- 4 Co-location of CHHHS and JCU and other organisations, including tertiary educators, research institutions, commercial partners and other health providers, to strengthen JCU and CHHHS' relationships and encourage collaboration between these partners.
- 5 Technology-driven innovation in service delivery (including health), that directly benefits FNQ, the tropics and connects to Asia Pacific.
- 6 Digital technology creates a more connected environment than ever before. Harnessing the power of digital technology will allow CHHHS and JCU to undertake education, training, and research into innovative service delivery, that is directly relevant to FNQ and the tropics, from Cairns.
- 7 Grow, attract and retain the workforce of the future locally.
- 8 Part of improving education, learning and research in FNQ will be providing an expanded range of tertiary education in Cairns, in sectors including Health as well as Science, Technology, Engineering, Arts and Mathematics (STEAM). Graduates of these courses will be able to undertake post-graduate training and research locally; and for health, will allow training of specialists locally in Cairns.
- 9 Grow the local economy through innovation and skilled employment opportunities.
- 10 The Precinct will provide local knowledge economy jobs such as educators and researchers in health, STEAM, and related disciplines.

2.0

The purpose of the Dugurrdja Precinct Masterplan

The Masterplan has been developed to:

Direct planners, urban designers, architects, landscape architects, builders and other professionals when preparing a development proposal within the Dugurrdja Precinct. The Precinct Management Group (PMG), shall reference this document and these principles in assessment and approval of any development approval.

2.1 The Approach to the Masterplan

The Masterplan sets out a process to prepare a development proposal within the Dugurrdja Precinct plan. A performance-based approach is applied through a set of interrelated design elements to enable Precinct-specific design outcomes to be achieved.

This reflects that every development within the Precinct is different and allows designs to be tailored to the specific needs and characteristics of each development.

2.2 Vision

Dugurrdja Precinct is renowned as a dynamic and interdisciplinary community that accelerates discovery, learning and opportunity; collaboratively and sustainably serving the region and its people into the future.

2.3 Shared Values

1. CARE: Listening, understanding and including communities and their needs to work towards improved health equity and a better future.
2. COURAGE: Leading transformation through discovery and innovation for a better Far North Queensland.
3. COMMUNITY: A sense of belonging and the importance of place for the peoples of the tropical north and our wider region.
4. COLLABORATION: We embrace collaborative ways of working in dynamic networks of innovative organisations and individuals.

2.4 Principles

1. PLACE: Acknowledge and respect the history of place; first peoples and the contemporary challenges we now share to lift the health and social wellbeing of our region.
2. INNOVATION: Inspire innovative and transformational approaches to excellence in delivering world-leading sustainable healthcare in regional, rural and remote communities with global reach.

3. EQUITY: Promote equity and inclusion for all communities in Northern Australia through innovation, healthcare, research and education.
4. CONVERGENCE: Bring together disparate communities, sectors and disciplines to connect and collaborate.
5. PARTNERSHIP: Commit to reciprocity and trust between Precinct partners, embracing the interdisciplinary nature of complementary sectors.
6. OPPORTUNITY: Attracting complementary partners with a view to growing skills, strengthening organisations and building networks that creates connectivity within and beyond the Precinct.

2.5 Dugurrdja Precinct Design Principles

The design strategies were agreed by both JCU and CHHHS that recognise important direction for the site Precinct.

1. The Precinct will have shared urban space that recognises the co-located and connected uses of the Precinct, as well as invite active community participation. Precinct urban space should be commensurate with the scale of the overall development.
2. Learning and research should be on display at the ground plane maximising opportunity for engagement by students, researchers, and community.
3. Connections to Country should be considered and co-designed with community.
4. The Precinct shall be generous and welcoming and highly permeable, with clearly defined way finding, secure and safe.
5. Outdoor covered social learning spaces and connections through and into landscape should be developed.
6. Ground and Level 2 floor levels should be aligned for maximum flexibility particularly as buildings will be phased over time.
7. Organizations and their buildings should be clearly identifiable but at the same time be part of and connected to the overall Precinct.
8. Infrastructure and spaces should be shared as much as possible to avoid duplication (note: Shared community space and infrastructure will require a management framework (i.e. Body Corporate, PMG or other) .
9. The Cairns Hospital should be highly connected to the Precinct
10. Carparking strategies need to be considered for the whole of the Precinct to cater for capacity of agreed GFA and should be safely accessed after hours (however, this could be phased.)
11. Preserve existing significant trees on site if possible and practical.

3.0 The Site

The Precinct consists of two sites. (Figure 1.0)

1. The major Precinct facilities will be within the block bounded by Charles St and Sheridan St with smaller frontages to Digger Street and Grove Street. An internal flank of the site is bounded with a Land Reserve landscape. A new easement has been created for access to the Cock and Bull carpark with an existing two storey property on the corner of Sheridan St and Grove Street.
2. The property to the North of Charles Street is proposed to accommodate the carparking for the Precinct which may include a covered pedestrian bridge over Charles Street. This is still subject to a number of conditions and may be moved. There are four parcels of land that will make up the Multi-storey Carpark which will need to be amalgamated.
 - A. Public park open space will be incorporated into a more accessible Precinct Court. (Refer Figure 8.0)
 - B. JCU owned property
 - C. Land Reserve. A portion of the land reserve will be required to facilitate multi-storey carpark with enough buffer landscape to reduce impact to northern residential properties.
 - D. Road Reserve. A buffer landscape will be required to adjoining residential property

CHHS have proposed a new Surgical Centre along Digger St and Charles Street which will be under a separate development application.



Figure 1.0 - Site



4.0 Precinct Strategy

4.1 A new urban place within the tropics

The Dugurrdja Precinct development will become a new city marker for North Cairns. With a potential 40,000sqm site density the Precinct will contribute to a dynamic community centered around health and innovation. A number of staged developments although reflecting their unique planning and identity will address the urban fabric as a unified whole. Clearly identifiable markers will create permeable welcoming access points into the heart of the Precinct.

4.2 Destination Workplace

Creating a destination where staff, students and researchers look forward to coming together to collaborate. A critical component of the development will be a uniquely landscaped court designed for the tropics, gives focus and unifies the Precinct as a collective of varied but allied developments.

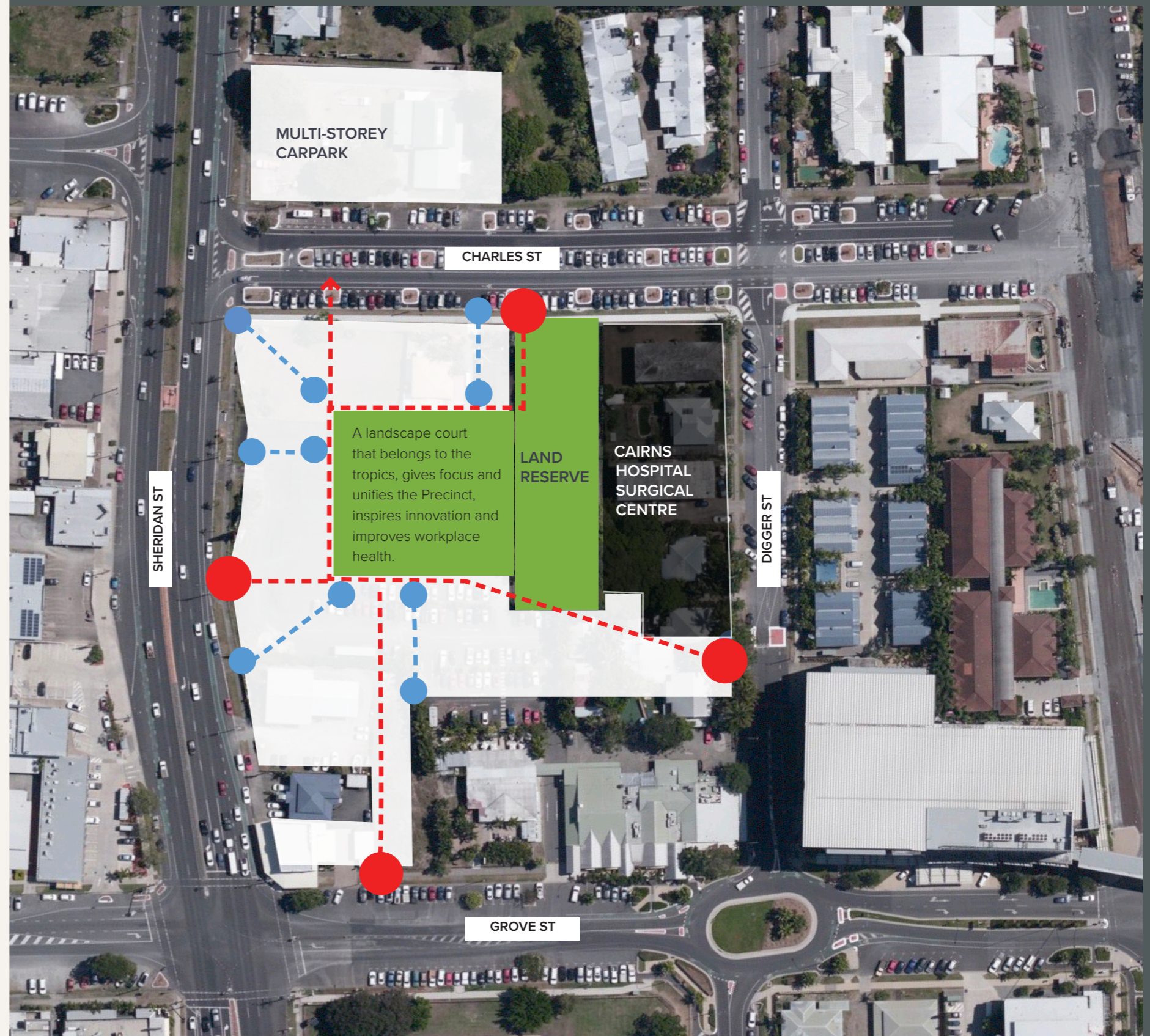
4.3 Biophilic Design

Maximise natural light and materials, integrated landscape as anchor to Precinct. Biophilic design can reduce stress, improve cognitive function and creativity, improve wellbeing and expedite healing. Refer to section 6.27.

4.4 Networked Connections

Connections between Precinct organisations around the court ensures greater potential for collaboration. Finding as many ways as possible for different organisations can use these networks to further reinforce collaboration is critical for the success for successful health and innovation outcomes. Connections to the broader City networks. The Precinct needs to express itself as a unified 'family' of organisations that is clearly legible, accessible and welcoming.

Figure 2.0 - Connections to Precinct and City



- CITY MARKERS THAT WELCOME VISITATION AND IDENTIFY Precinct AS WELL AS CREATE PUBLIC ROUTES INTO THE Precinct
- BUILDING ENTRY MARKERS CLEARLY IDENTIFY DEVELOPMENT PARCELS WITH CONNECTIONS INTO THE Precinct COURT





Megan Cope - 'After the flood'
Artwork incorporated into the Campus Plaza Canopy - 2020
JCU Campus, Townsville

5.0 Indigenous Design Principles

Dugurrdja Precinct is committed to building stronger relationships between Aboriginal and Torres Strait Islander peoples and other Australians.

We will strive to create an environment where Aboriginal and Torres Strait Islander peoples and members of the wider campus community, work, study and live together with mutual respect and understanding.

Central to our efforts is fostering an environment where all students, staff and visitors feel safe and valued, regardless of their background.

Dugurrdja Precinct shall seek to conduct its future business engagements in ways that can demonstrate commitment to a leadership role in promoting Aboriginal and Torres Strait Islander higher education and health services and through this, building opportunities for wider community engagement.

5.1 Respectful of historical hurt

Adopt Designs that heal, promote good health and well-being, and avoid further trauma.

- Designs that break the notion of a people of the past.
- Designs that break the notion that we are a people that exist only in colonial times.
- Designs that break the notion that we are guests in this country.
- Designs that break the notion that we are a people without knowledge or science.
- Designs that break the notion that we can't self-determine our own futures.
- Designs that break the notion that we can't all work together.

5.2 Respectful of ancient knowledge traditions

Designs for buildings and landscapes that projects knowledge and innovation forward on a continuum that started tens of thousands of years ago.

5.3 Respectful of Place, Country and Language

Designs of buildings that are respectful of Place need to speak the language of Place to remind people about our responsibilities for the care of Country.

Speak your language and Country will speak to you.

5.4 Respectful of the Planet (Mother)

Designs for buildings with least impact on Country, sustainable, and renewable.

5.5 Respectful of People

Designs that bring people together, gathering places, and in ways that allow encounters where we can be respectful to each other.

5.6 Continuities and Discontinuities

Designs that provoke awareness of the simplistic vectors between Indigenous/non-Indigenous, continuities/discontinuities with the past/present, us/them, black/white (e.g., designs that can invoke a position of timelessness, with no limits or borders, and in step introduce a form of humanity that reminds us about renewal, growth and hope).

Extracted from JCU Indigenous Design Principles - Prof Martin Nakata 2022

6.0 Planning Intent

The following illustrations reflect the intent of the Dugurrdja Precinct Planning Principles detailed in section 6.0.

6.1 Street Edge activation and identity

A minimum boundary setback activates the site and allows for awnings and pedestrian footpaths to the street to help navigate Cairns wet weather and need for shade. Facades will vary in response to climate and corporate identity. It is intended that each development can/will create its own identity through their facades, shading, variable heights and program of use.

Consideration needs to be given to creating welcoming and easily navigable thresholds into the site that invite visitors into the heart of the Precinct.

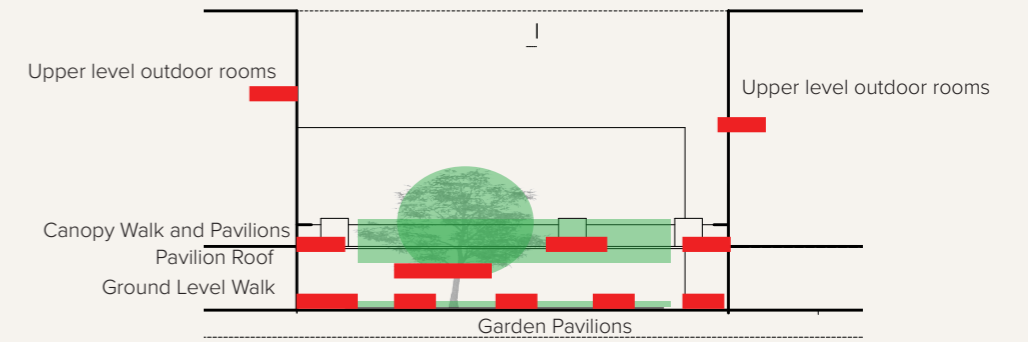


6.2 Courtyard for the tropics experienced from multiple perspectives

Level 1 view of Courtyard including outdoor covered amphitheater and roof top meeting spaces create multiple ways of occupying space both horizontally/laterally as well as vertically ensures dynamic participation in this outdoor setting. Extensive use of outdoor fans promotes air-movement and comfort in the tropics.

Opportunity for artwork installations as part of potential Indigenous songlines through Precinct will form part of the detail development of the Precinct.

A clearing in the forest Calmness of the open space and water element form a gravitational pull within the landscape. Plantings occupy the built form creating a sense of a verdant tropical experience. High storey canopy shade plantings with low storey underplantings to ensure safe visibility across courtyard.



Spaces within and around the Courtyard can take advantage of occupying this landscape from multiple levels creating different dynamic experiences and perspectives into the court's tropical planting

Figure 3.0 - Diagrammatic Courtyard Section

Covered public amphitheater would ideally support both cross-disciplinary/cross-Precinct engagement and events. Consider technology and provision of external fans

Explore opportunities to occupy the Precinct Court at a number of levels to maximise opportunity to engage with space and intensify use



Lower storey plantings to improve safety with high storey plantings for shade

Covered meeting pavilions to support a range of visitors and group sizes could be distributed throughout the garden setting

Presence of water is encouraged

Plantings over and around structures is encouraged

6.3 The Courtyard as anchor to the Precinct

The Courtyard becomes the spatial anchor for the Precinct, placing Dugurrdja Precinct within the context of the tropics. This new urban space in Cairns is an important public place for researchers, students and staff of the Dugurrdja Precinct creating an identity and sense of belonging for its community for tropical health and innovation. It is also significant that the broader community are invited and feel welcome to engage with the activities of Dugurrdja Precinct. This court becomes a collective place to encourage visitation, occupation and collaboration. An ordered framework is established with the buildings bounding the Precinct court and create a counterpoint to the dynamic complexity of the tropical plantings and distributed pavilions.

This well shaded public space with lower storey plantings optimises views across the court with high storey plantings to maximise shade.



Figure 4.0 - DUGURRDJA PRECINCT COURTYARD

6.4 Diverse range of ways to occupy space

Courtyard including garden pavilion with covered outdoor auditorium and meeting spaces above distributed within landscape. Seating types support a range of outdoor meeting settings in the shade of the canopy plantings and under the Precinct cloister.

Ground plane of buildings needs to be highly engaging and contribute to the activation of the courtyard and explore opportunities for blurring boundaries between inside and outside.

Example of an outdoor meeting space used for indigenous yarning.
St. Catherines College
University of Western
Australia. (Wilson Architects)

Pavilions that can take advantage of shade and plantings to reinforce uniqueness of place in th tropics



Opportunities for public and Precinct engagement through the creation of a range of outdoor meeting places



6.5 High level interconnected route to bring Precinct together

Level 2 Canopy Walk illustrating continuous covered circulation with meeting pavilions along its landscaped curtilage.

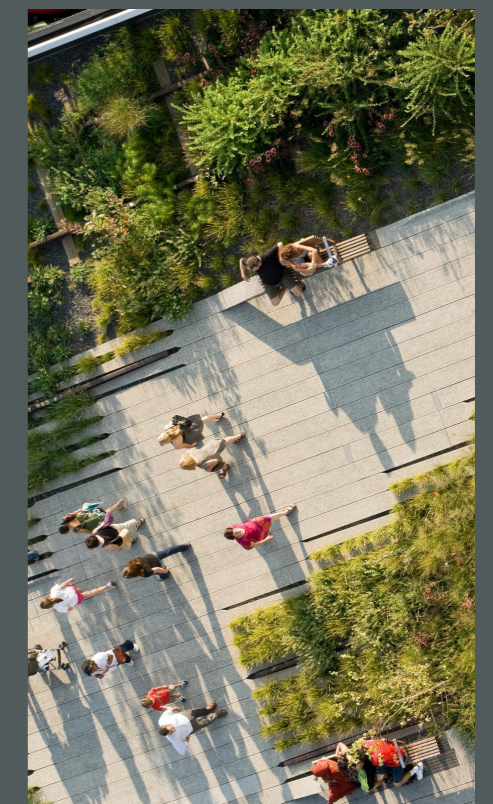
The Canopy Walk creates an alternative more privatised interconnecting route between the various development institutes, research and education centres, as well as enabling a direct covered circulation route into the hospital.

High Line - New York.
(below) A highly successful public elevated landscaped route interconnecting buildings and Precincts that includes art work and installations.



Covered routes to ensure all weather access around Canopy Walk and back to hospital

Explore opportunity for a range of meeting pavilions along Canopy Walk to maximise engagement with Precinct Court. Consideration should be given to the inclusion of fans for comfort and furniture designed to prevent movement in storms



7.0 Dugurrdja Precinct Planning Principles

The following principles reflect agreed intent for the Health and Innovation Precinct. Variations will require approval by the Precinct Management Group (PMG).

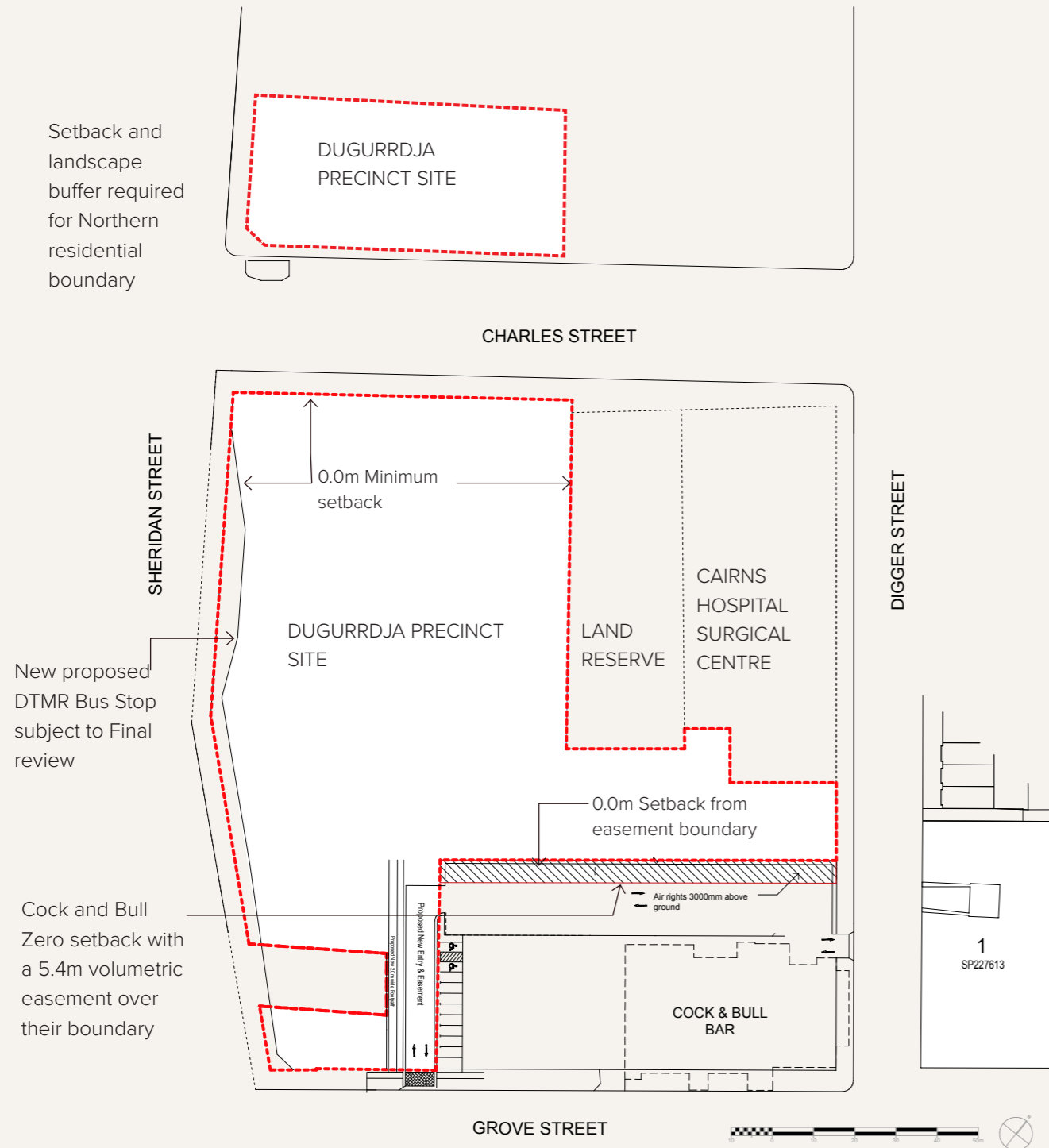


Figure 5.0 - Site Boundary Setbacks

Planning Principles	Notes:
7.1 BOUNDARY SET BACKS	It is the intention of Precinct to maximise engagement with the street as well as activate its edge. A zero setback allows for a range of architectural and planning solutions for each of the developments to include shading and modulation of facades. Boundary to the Cock and Bull 0.0m set back with a 5.4m volumetric easement over their boundary and 3.0m above ground. Zero lot setback to internal boundaries. Refer Figure 5.0
7.2 YIELD OF DEVELOPMENT	It is the intention of the Precinct to maximise yield. The first stages of the development are however set by the foundation project CTEC circa 3,500sqm. Additional projects will need to demonstrate how an optimal yield can be achieved based on the footprint as well as max allowable building heights..
7.3 DEVELOPMENT SITES	Figure 8.0 illustrates potential development sites. Finalised footprints are subject to functional planning, assurance that access into the site is welcoming and permeable and cross breezes into the courtyard are not impeded. Development Sites are indicative and may be reconfigured to optimise use of the land, and connection to and through the Precinct
7.4 BUILDING HEIGHT	Planning scheme intent for building height prescribed in building height overlay code. Max building height determined by - Obstacle limitation surface – 46m AHD CTEC will be 4 storeys in height - 24.3m AHD. (Refer Figure 6.0, and 7.0)
7.5 SITE MASSING	The foundation building creates approximately 3.500sqm GFA. The resulting massing reduces the potential height to Charles Street from the allowable 46m that lessens the impact and overshadowing to the immediately adjacent residential developments. Sheridan Street as a major arterial road with commercial tenancies would benefit from the increased scale and mass as part of reinforcing the Dugurrdja Precinct's place within North Cairns. (Refer Figure 7.0) The proposed multi storey carpark addresses both Sheridan St and Charles St with a land reserve buffer to the multi residential buildings to Digger St and Charles Street

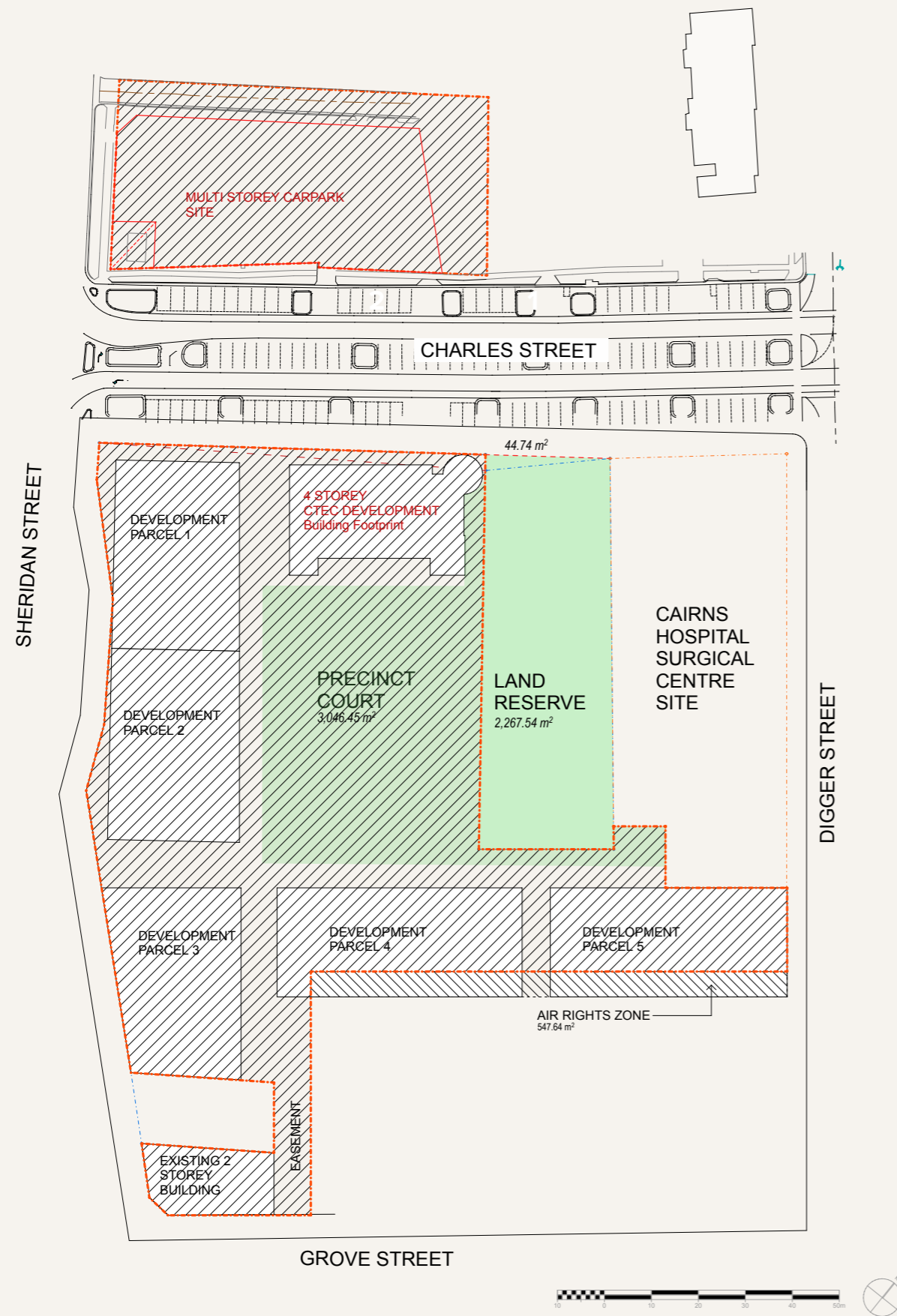


Figure 8.0 - Ground Plane

Planning Principles	Notes:
7.6 FLOOD AND STORMTIDE INUNDATION	To achieve the required FFL 3.6m hydrology and hydraulic study will be required - Cairns Plan has a planning scheme policy on required details. Coastal Hazard Adaptation Strategy - ensure consultant aware of latest storm tide and inundation levels through the Coastal Hazard Adaption Strategy (CHAS) mapping.
7.7 WATER AND SEWERAGE	Connections to Council's reticulated water and sewerage network required. Requirements will be determined in consultation with CRC. Sewerage needs be connected to existing utilities and avoid crossing through Precinct Court or across to other Precinct development sites.
7.8 STORMWATER DRAINAGE	Stormwater for each development needs to be independently taken into local stormwater networks and will need to be addressed through detailed drainage study. Overland flow from courtyard needs to be satisfied though hydrology and hydraulic study. Major stormwater inlet at the corner of Digger and Charles Streets. Stormwater discharge onto Digger Street should be avoided.
7.9 ACOUSTIC TREATMENT FOR NOISE EXPOSURE	The site lies with the flight corridor from the airport ANEF - 25-30 contour. Will need to achieve required indoor design sound levels for sensitive land uses. External spaces need to minimise noise generation and nuisance.
7.10 COURTYARD - A PLACE FOR HEALING	The Precinct shall support a community space for the benefit of all occupants of the Precinct as well as encourage external engagement. The character of the space should be consistent and present a unified response as a place for healing. It should reflect the nature of living in the tropics with links to indigenous stories and plantings with ground covers and lower storey planting as well as high canopy trees for shade but also encourage air movement through the space. This landscaped green space creates shaded spaces to occupy for groups and individuals to meet and relax. Additional facilities such as a covered outdoor gathering space for events, presentations displays and demonstrations should be considered. Any structures within the courtyard need to demonstrate how they will add to the activation of the space. The Precinct Court needs to acknowledge pedestrian desire lines through and across the landscape. The existing significant trees shall be retained if possible. (Refer Figure 8.0)

NOTE: Finalised building footprints are subject to functional planning, assurance that access into the site is welcoming and permeable and cross breezes into the courtyard are not impeded.

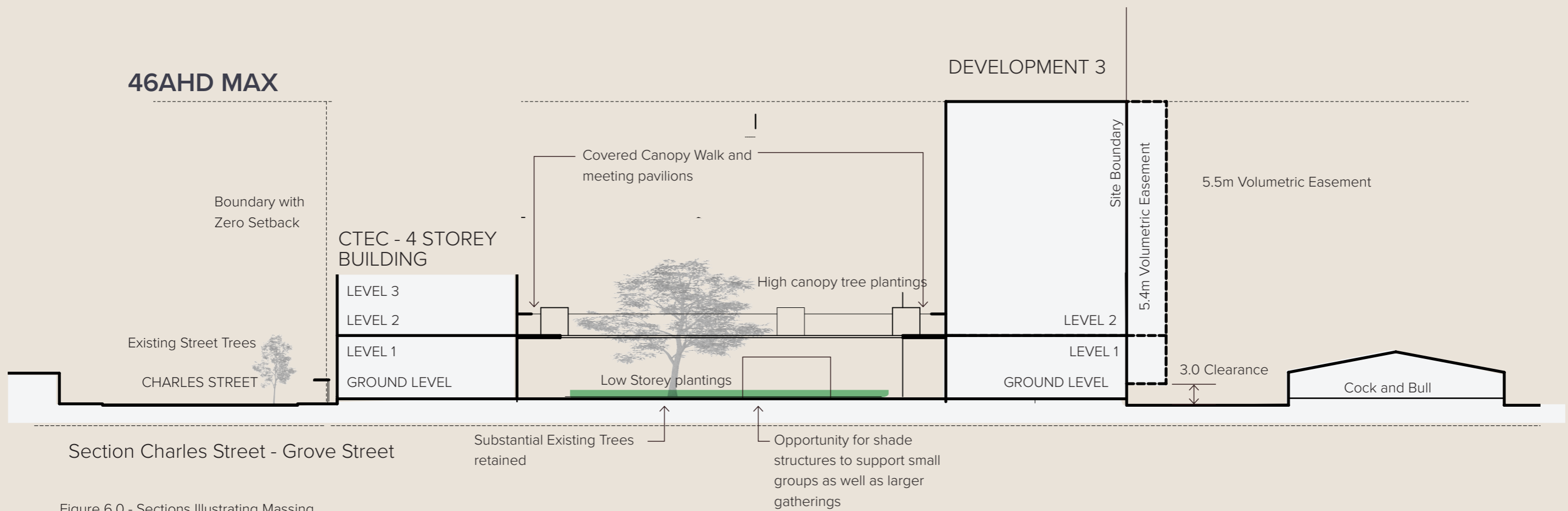


Figure 6.0 - Sections Illustrating Massing

CAIRNS HOSPITAL SURGICAL CENTRE PROJECT UNDER SEPARATE DEVELOPMENT APPLICATION

CTEC at 4 Storeys (24.3m AHD)

MULTI STOREY CAR PARK 400-700cars @ 5-7 Stories - (Approx. 17-23m AHD)



SCHOOL PLAYING FIELDS

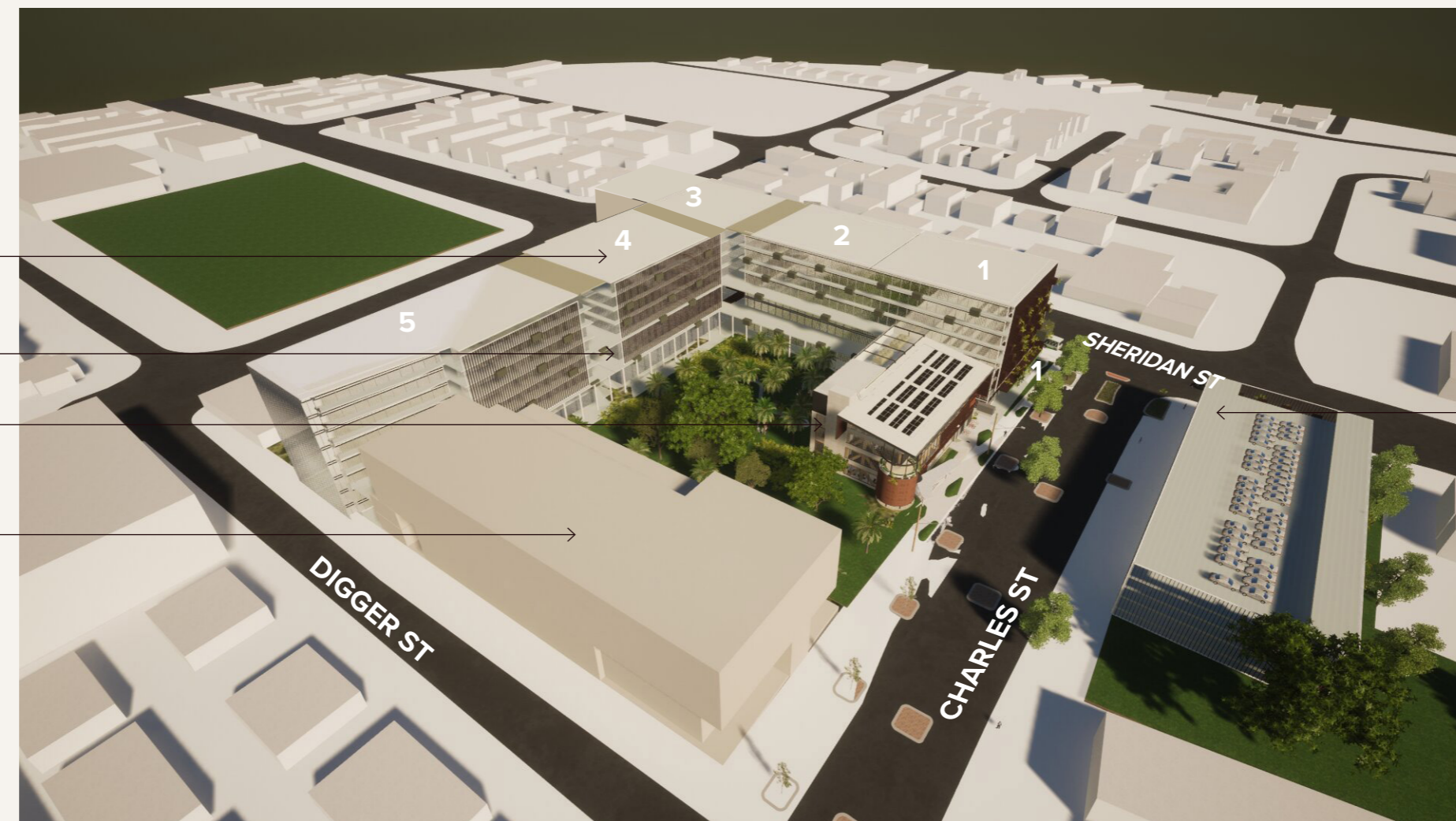
DEVELOPMENT 1, 2, 3, 4 and 5 AT 46M AHD
NOTE: Configuration of the building footprints may change. i.e. Development Site 1 may be shorter and Development site 2 may extend to Sheridan Street but overall massing heights remain the same.

DEVELOPMENT 1, 2, 3, 4 and 5 AT 46M AHD

CANOPY WALK

CTEC at 4 Storeys (24.3m AHD)

CAIRNS HOSPITAL SURGICAL CENTRE PROJECT SEPARATE DEVELOPMENT APPLICATION



MULTI STOREY CAR PARK 400-700cars @ 5-7 Stories - (Approx. 17-23m AHD)

Figure 7.0 - Site Massing



Planning Principles	Notes:
<p>7.11 COVERED WALKWAYS</p>	<p>Street Network - Each development shall provide covered walkways along their frontages – Sheridan Street, Charles Street and Digger Street Design should be consistent to create a sense of a collective Precinct. Walkways will help with weather protection and reduce scale of built form and provide well lit street circulation. Entry points into the Precinct shall recognise street addresses. Charles Street to address Carpark. Digger Street to address access back to Hospital. Grove Street addresses movement to South, School etc. Sheridan Street addresses bus stop.</p> <p>Courtyard Network - Internal circulation to edge of courtyard needs to be a continuous interconnected covered connection. Each development contributes to its adjacent courtyard covered space.</p> <p>Consideration should be given to location of entrances to building/Precinct to the location of existing/proposed Sheridan Street Bus Stop, Carpark, CHHHS hospital, and Grove Street. Buildings need to address both street and courtyard with good casual surveillance. Public entries into the Precinct courtyard need to be clearly demarcated and welcoming. The Precinct Courtyard needs to be secured after hours (management agreement required) Public and private domains clearly identified. Lighting designed to illuminate defined circulation routes with low storey landscape planting to avoid concealed entrapment. (Figure. 7.0)</p>
<p>7.12 THE CANOPY WALK</p>	<p>Each development shall ensure that they incorporate an upper level circulation route that is to be continuous for each of the development sites to enable connection to the whole Precinct, the Charles Street Carpark and Block E of the Cairns Hospital. I.e. level 2. (Note: Ground, level 1, level 2)</p> <p>This semi public space will be landscaped with a range of spaces that can be occupied for a range of uses. (Each development should consider how they can best support the Precinct in offering a diversity in these kinds of formats).</p> <p>Consideration shall be given to the Canopy Walk edge condition to be modulated and figured to be non-institutional and to encourage occupation.</p> <p>Landscaping on the Canopy Walk needs to be consistent in the range of forms, textures and types. Consider tendrilled plants as fringe to edge of lower walkway.</p> <p>Building edges that adjoin this semi-public space shall consider programming activities to maximise activity to this edge, encourage passive security observation.</p> <p>Access and security protocols to these spaces will need to developed by the PMG. (Figure 9.0 and 9.1)</p>

Figure 9.0 - Canopy Walk

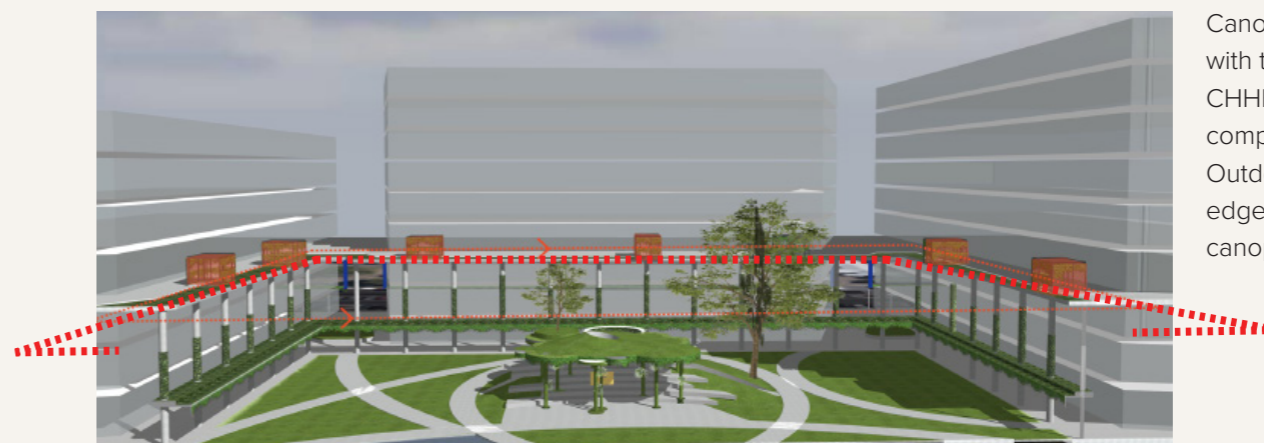


Figure 9.1 -- Canopy Walk Diagram

Canopy Walk connects all buildings with the potential to also link into CHHHS E-Block to create covered compliant access to the Hospital. Outdoor meeting spaces activate edge and take advantage of canopy view into the Precinct Court.

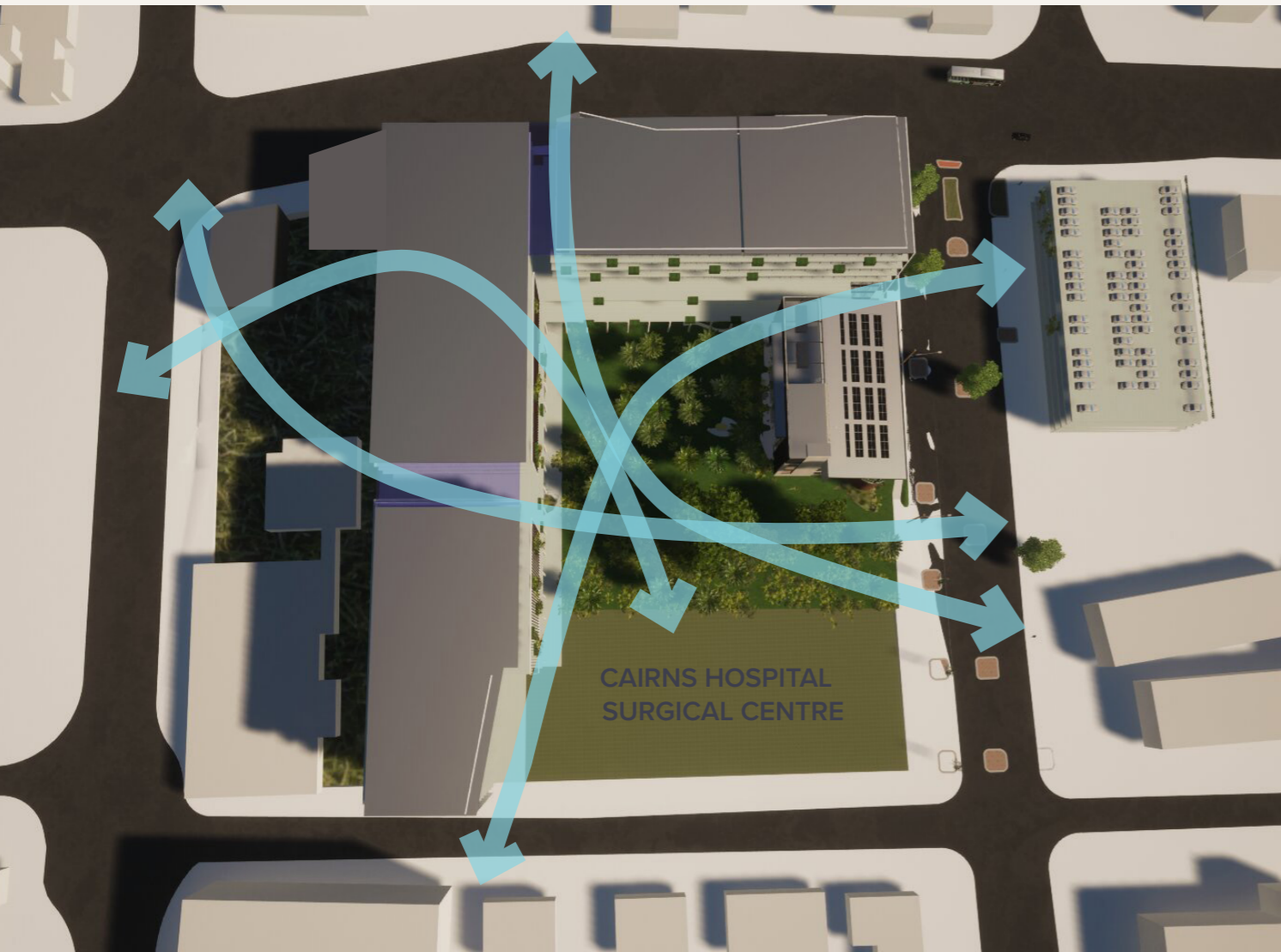


Figure 10.0 - Cross Flow through Precinct Court

Planning Principles	Notes:
<p>7.13 LANDSCAPING</p>	<p>Development needs to ensure no safety hazards are created in the operational airspace of the Cairns Airport, eg. wildlife, birds or bats. Landscape to be endemic to region. Planting to Courtyard to create high storey shade, such as Polyscias murrayi "Pencil Cedar" and Ficus Albipila (endemic to Cairns before development) Note: examples only Low storey planting to be low maintenance and avoid concealment. Consider colour in the section of the planting types. Spaces to recognise Connection to Country. Consider introducing plantings that reflect indigenous medicine. Footpath hard landscaping to be consistent across the Precinct.</p>
<p>7.14 CROSS-FLOW OF BREEZE</p>	<p>The Precinct needs to allow for cross ventilation across the site to ensure comfort to the Courtyard spaces both at ground level and the Canopy Walk. (Figure 10.0) This can be achieved either with generous setbacks between buildings and generous open undercroft spaces.</p>
<p>7.15 PUBLIC ARTWORK</p>	<p>There is an expectation that the Precinct support public art installations that acknowledged history, promote reconciliation and celebrate the region particularly around the themes of health and innovation. (Management Agreement requirement) It is expected that the PMG will develop an art policy where all developments contribute to the inclusion of artwork within the Precinct.</p>
<p>7.16 FACADES</p>	<p>Each development site is encouraged to express architectural excellence in its response to context and climate. However there shall be a need to demonstrate how any individual styles can still relate to previously developed buildings within the Precinct to ensure there is a 'family of forms'.</p>



CONSIDER LOCATION OF SECURE THRESHOLDS TO MAXIMISE SENSE OF WELCOME INTO PRECINCT (IE SET BACK FROM STREET SIMILAR TO MUNRO MARTIN PARKLANDS)

- PUBLIC ENTRY POINTS SECURED AFTER HOURS
- - - GROUND LEVEL SECURE LINE TO PRECINCT COURT
- - - CANOPY WALK

Planning Principles	Notes:
7.17 SERVICES	Each building will be independently serviced and will connect to external services owned and operated by mainstream utility providers.
7.18 SERVICING	<ul style="list-style-type: none"> Refuse / Large Truck Servicing (Occasional) Servicing via Smaller Vehicles and Vans (Regular) Refuse / Large Truck Servicing (Occasional) As per Council's Code / AS2890 Education/Health Precincts typically use RCV / MRV design vehicles to service the site Require a height clearance of 4.5m Service bay of 3.5m W x 11m L (to accommodate RCV) <p>A service area can be proposed given there is appropriate storage area that is separate to cars and pedestrians. As per AS2890, regular servicing on a minor road is limited to one (1) reverse manoeuvre.</p> <p>Consider service locations to minimise visual impact to amenity.</p>
7.19 SECURITY	<p>CPTED – Crime prevention through environmental design</p> <p>The intention of any entry into the public courtyard is that it will need to be secured after hours based on an agreed management policy. It is expected that each new development will ensure that the site can be effectively secured during and at the completion of the developments. Security gates shall be recognised as a family of materiality and pattern to ensure consistency to Precinct. Lighting designed to illuminate defined circulation routes with low storey landscape planting to avoid concealed entrapment.</p> <p>Camera security to general community accessible spaces need to be managed and coordinated. (PMG)</p> <p>CRC will require street lighting upgrade as part of adjoining street developments.</p>
7.20 TRANSPORT AND PARKING	<p>All transport will need to be approved by DTMR and CRC.</p> <ul style="list-style-type: none"> Sheridan Street state controlled road – vehicular access highly unlikely. Digger Street is best suited to Precinct lay-down, for buildings on that side. Charles Street access will need to acknowledge the removal of street parking and provide additional within any new Precinct carpark facility. <p>Carparking rates - use Cairns Plan as a guide and other standards - traffic impact assessment will determine car parking requirements.</p> <p>Consideration shall be given to safe access from the carpark facility into the Precinct. Bicycle parking and end of trip facilities to be provided (consideration should be given to minimising number of facilities on site but rather combine facilities to support a number of developments. End of trip strategy will be developed by a consultant and it is likely that this will be a staged development (Management agreement required).</p> <p>DTMR plans road widening to Sheridan St which will affect the boundary alignment along Sheridan Street to accommodate new Bus Stop. This is subject to further review due to impact of development site.</p> <p>Removal of existing on-street parking will need to be accommodated in alternate approved locations or within Precinct car parking facilities. (Refer Figure 12.0)</p> <p>CTEC as foundation project currently incorporates End of Trip facilities for CTEC building users only.</p>

Figure 11.0 - Security and Servicing

Planning Principles	Notes:																				
<p>7.21 PARKING REQUIREMENTS</p>	<p>The Precinct potentially will be able to support 40,000sqm which would translate to approximately 4000 students, researchers and staff. Commercial parking proposal for 450-700 car bays in multi-storey car parking facility on Charles Street depending on the development types. (see below) A temporary at-grade carpark will be considered whilst staged development is in its infancy.</p> <p>The table below details the estimated Accessibility Score in comparison to similar Education Precincts in South-East Queensland.</p> <p>The score for this campus is low in comparison to the SEQ campuses but generally similar to the University of the Sunshine Coast.</p> <p>Site ID Location Accessibility Score</p> <ol style="list-style-type: none"> 1. Griffith Nathan - 120 2. QUT Kelvin Grove - 468 3. QUT Gardens Point - 185 4. UQ St Lucia - 197 5. USC - 24 6. JCU Campus - 32 <p>Based on this, the following mode share is expected:</p> <p>Private Vehicle (Drive) = 67%</p> <p>Private Vehicle (Drop off) = 3%</p> <p>Public Transport = 19%</p> <p>Walk = 12%</p> <table border="1" data-bbox="1866 1050 2653 1178"> <thead> <tr> <th>Mode</th> <th>Share</th> <th>Students</th> <th>Staff</th> </tr> </thead> <tbody> <tr> <td>Drive</td> <td>67%</td> <td>2680</td> <td>163</td> </tr> <tr> <td>Drop Off</td> <td>3%</td> <td>120</td> <td>7</td> </tr> <tr> <td>PT</td> <td>19%</td> <td>760</td> <td>46</td> </tr> <tr> <td>AT</td> <td>12%</td> <td>480</td> <td>29</td> </tr> </tbody> </table> <p>Applying Council's rates to the above "Drive" rates would require:</p> <p>1 space per employee = 163 bays</p> <p>1 space per 10 students = 268 bays</p> <p>TOTAL = 431 bays.</p> <p>A private hospital would require:</p> <p>1 carparks per 4 beds</p> <p>2 carparks per consulting room</p> <p>0.5 carparks per employee</p> <p>If a Private Hospital was on Development Site No. 1 this would equate to approximately 250-300 carparks.</p>	Mode	Share	Students	Staff	Drive	67%	2680	163	Drop Off	3%	120	7	PT	19%	760	46	AT	12%	480	29
Mode	Share	Students	Staff																		
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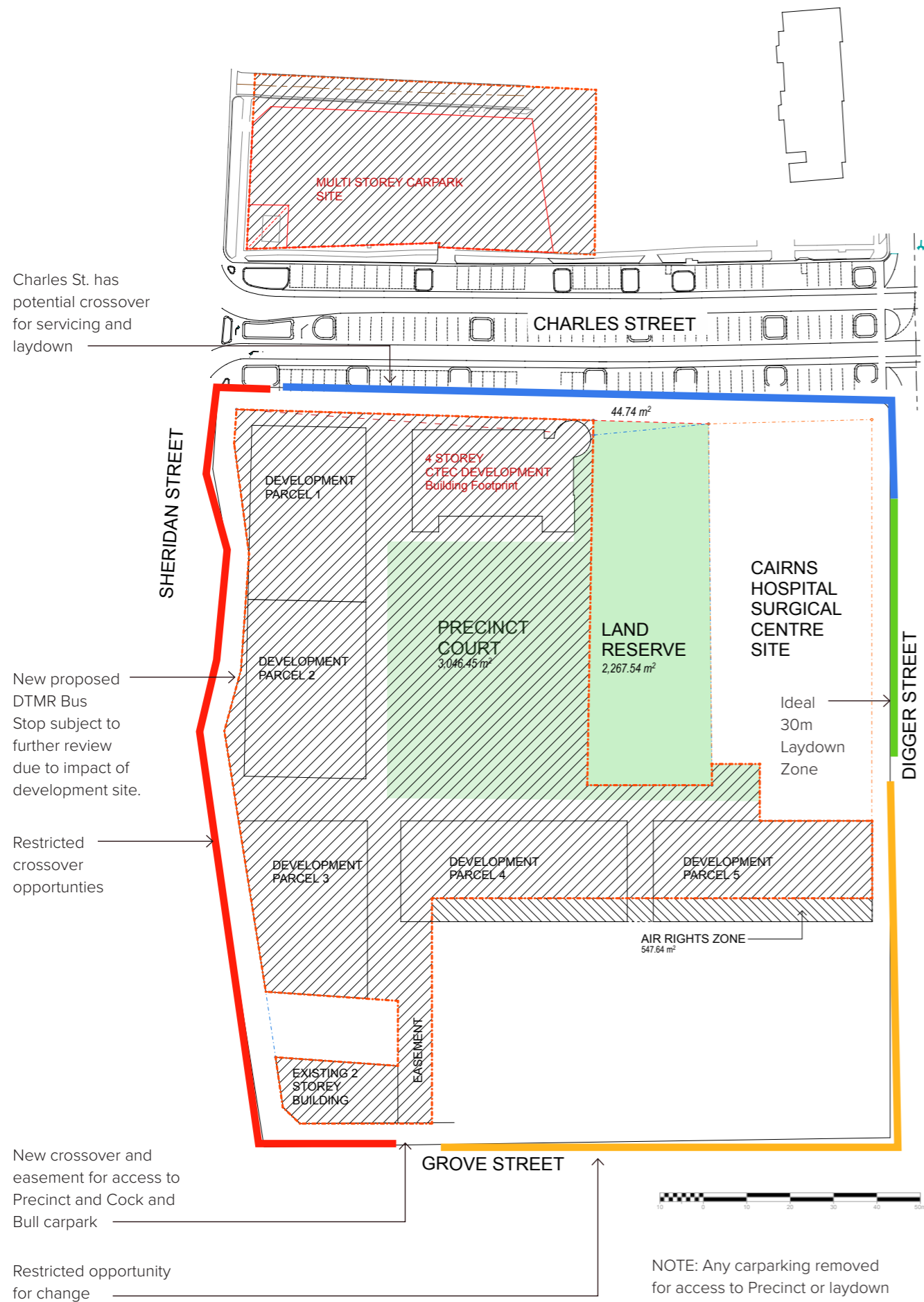
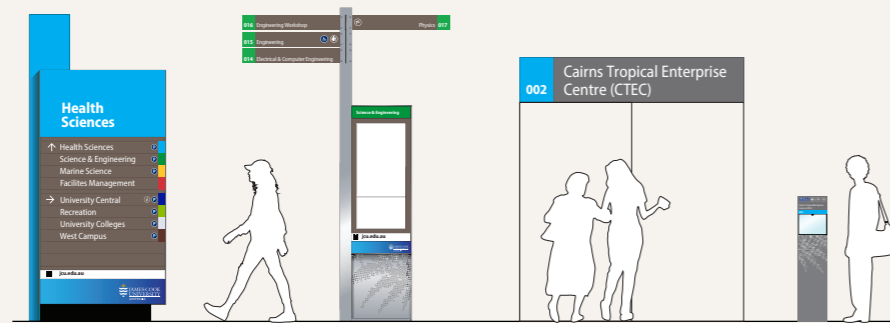


Figure 12.0 - Street Parking Hierarchy

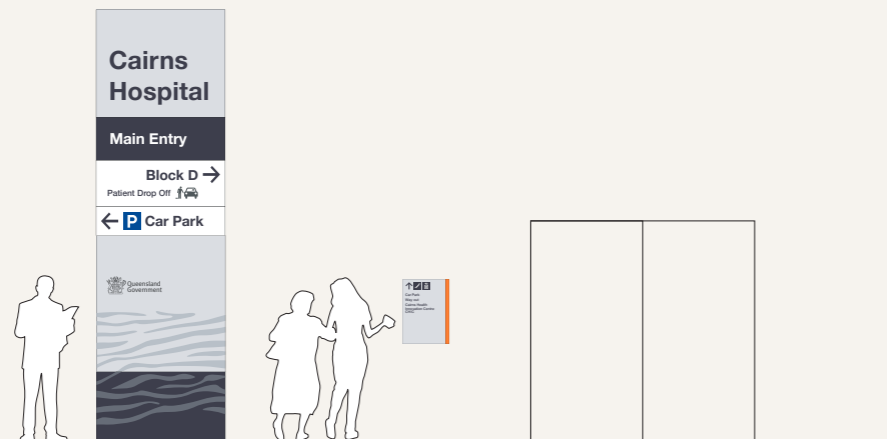
Planning Principles	Notes:
<p>7.22 SITE ACCESS</p>	<p>(Figure 12.0) The subject site has four (4) site access options via Sheridan Street, Charles Street, Grove Street and Digger Street. These have been reviewed below.</p> <p>Sheridan Street Sheridan Street is a state-controlled road and access at this frontage would be subject to the State Assessment and Referral Agency (SARA). This would not be supported (given available alternative access) and is not been considered further.</p> <p>Charles Street Council-controlled road with 90-degree parking along the entire length. Given the high parking demand nearby, it is desirable not to impact on-street parking where possible. Limited locations where access can be provided to minimise impact to parking. Curb could be modified with rationalised street trees to optimise access opportunity. Laydown zones will require relocation of existing carparks as part of new multi-storey carpark.</p> <p>Digger Street Council-controlled road and is currently a one (1) way street with angled and parallel parking on both sides. Given the high parking demand nearby it is desirable not to impact on-street parking where possible; however there is a low volume of parking provided here. Due to the one-way nature, provides limited connections, although these are improved compared to Charles Street Entry and exit can occur appropriately from all directions This is the most desirable location for a drop off area. This street could also be considered being returned to a (2) two way street to improve access. In summary, site access may be considered, however this should be designed acknowledging this streets desirable location for a set down area.</p> <p>Grove Street Council-controlled road with several restricted on-street car parking spaces and limited frontage. Providing a left in / left out access is desirable and reduces conflicts (allows all vehicles to enter without giving way to others). Provides good connections to the external network, with inbound movements able to use the signals to enter from any direction and outbound able to use the nearby roundabout to exit to any direction. Separation to Sheridan Street will be a key factor, but given the proposed internal queuing >60m is not expected to cause any issues.</p>
<p>7.23 SET DOWN</p>	<p>Refer Figure 12.0</p> <ul style="list-style-type: none"> Set down would best be provided on Digger Street as this is currently one-way and has sufficient pavement width to provide this. Suggest initially aim to provide this on-street for ease of use and to limit site impacts. Based on the above "Drop Off" rates in SECTION 6.21 it is expected that in the order of 19 drop offs may occur in a peak hour. Based on timing, we would suggest providing in the order of 25% of this to encourage the use and allow for up to 15 minutes for drop off / pick up. This would be signed as 15 minute parking This requires 5 x bays = 30m of drop off length (if parallel, which is recommended) Consideration would need to be given to separate drop off if Private Clinic or Hospital was proposed for the site. Charles Street could also be considered for 'Drop off' but would need to significantly adjust curb for stormwater management and additional carparks provided within multi-storey carpark where carparks are removed.
<p>7.24 FOOD AND BEVERAGE</p>	<p>As each new proposed development is considered, food and beverage offerings are to be reviewed with the Dugurrdja Precinct Management Group (PMG) to ensure a Precinct approach.</p>



JCU Signage Guidelines - External Sign Types

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0

JCU Graphic Standard Typeface, Myriad Pro Semi Condensed & Bold Semi Condensed



Cairns Hospital - External Sign Types

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1 2 3 4 5 6 7 8 9 0

Cairns Hospital Graphic Standard Typeface, Helvetica Neue

Existing Wayfinding Solutions

Two corporate signage strategies will need to find common ground within the Dugurrdja Precinct Site. This will need to be determined by the PMG.

Planning Principles	Notes:
<p>7.25 WAYFINDING AND BRANDING</p>	<p>Wayfinding strategies and graphics need to be consistent across the site in all public spaces. Internal signage can align to each developments corporate design standards.</p> <p>Vision All users and visitors at Dugurrdja Precinct are welcomed, informed and can navigate and explore easily, effectively and safely to achieve their daily goals.</p> <p>Wayfinding Objectives</p> <p>Perceptible: Provide consistent and legible wayfinding elements that helps all users understand the full extent of the Precinct and its connection with Cairns Hospital and the surrounding urban environment.</p> <p>Intuitive: Build on intuitive reading and spatial understanding of the Precinct and the buildings in developing the wayfinding system.</p> <p>Inclusive: Address the needs of all users with differing abilities and cultural backgrounds, particularly the needs of Aboriginal and Torres Strait Islander peoples, international students and people with disabilities.</p> <p>Contextual: The wayfinding communication supports seamless integration across the Precinct. Consider interpretation of significant historical, environmental and new technology elements within the Precinct.</p> <p>Robust: Develop a wayfinding signage system that is durable in this coastal, tropical climate and able to be easily and cost effectively maintained.</p> <p>Sustainable: Develop a wayfinding strategy that increases pedestrian activity by encouraging people to walk to destinations and to use the stairs rather than the lifts when possible. Develop a wayfinding system that utilises sustainable materials and processes.</p> <p>Innovative: Utilise state-of-the-art manufacturing processes and explore opportunities to connect with personal electronic devices and new technologies.</p> <p>Adaptable: Ensure wayfinding signage messaging can be easily updated as the site continues to develop and evolve. Provide appropriate mechanisms to ensure changes and updates can be made easily and quickly.</p> <p>Holistic: Ensure wayfinding is communicated consistently and clearly across all types of communication media such as signage elements, web sites, written correspondence and one-on-one interactions.</p> <p>Refer Figures 13.0 and 14.0</p>

Figure 13.0 - Wayfinding Strategies

Best Practice Exemplars

Initial Signage Schematics

Initial schematics and exemplars to be developed



Planning Principles	Notes:
<p>7.26 ENVIRONMENT AND SUSTAINABILITY</p>	<p>The masterplan includes high sustainability aspirations to provide a Precinct focused on biophilic design principles for the health and wellbeing of future occupants, and to facilitate the development of sustainable buildings as the Precinct develops.</p> <p>The Precinct will be seeking a Green Star Communities Rating. (Section 7 refers to rating schedule describing the key Environmental Sustainable Design (ESD) initiatives targeted at Precinct level and how these are to be achieved on the project).</p> <p>Each of the buildings within the Precinct can be certified with its own Design and As-Built rating, using any of the tools listed below. There would need to be a set of guidelines or requirements that ensured that all buildings were required to meet a certain level of sustainable performance.</p> <p>LEED LEED is the US Green Building Council’s sustainability tool. JCU have experience of using LEED for buildings. Minimum Gold rating requirement.</p> <p>Green Star Green Star, from the Green Building Council of Australia, is the most widely used sustainable benchmarking tool in Australia. Minimum 5 Star rating requirement.</p> <p>WELL The WELL tool has been developed by the International WELL Building Institute. This tool focuses on human health and wellbeing rather than environmental sustainability. Minimum 5 Star rating requirement.</p>
<p>7.27 BIOPHILIC DESIGN</p>	<p>The integration of landscape and architecture is at the heart of the Precinct design. The following considerations shall be demonstrated through the design of developments within the Precinct.</p> <p>Sensorial Patterns</p> <p>Visual: Visual connections to natural systems such as planting material, water, and natural light.</p> <p>Auditory: To be able to hear natural systems - wind, water and wildlife.</p> <p>Haptic: To be able to touch natural materials (i.e. planting to be adjacent to occupation rather than remote and inaccessible).</p> <p>Olfactory: To be able to smell natural systems such as air cleaned by plant foliage filtration, and the scents of plants.</p> <p>Natural Patterns</p> <p>There is an intention within the Court and it’s curtilage to support biomorphic forms in contrast to the order created from the street in response to its orthogonal boundaries.</p> <p>Spatial Patterns</p> <p>Places to observe (i.e. Canopy Walk)</p> <p>Places to withdraw (i.e. range of meetings spaces)</p> <p>Places to be revealed (i.e. the court revealed from the street)</p> <p>Places that stimulate (i.e. public gathering spaces and landscape)</p>

Figure 14.0 - Wayfinding Strategies

8.0 Sustainability Intent

There is an aspiration for all projects to look toward being responsible in designing facilities to incorporate sustainability initiatives that address social, economic environmental impacts.

Social: Social sustainability is the way in which a design contributes to the community.

Economic: Economic sustainability is related to the relationship between local production, fair trade, conditions of workers and how this impacts upon the economics of particular communities.

Environmental: Sustainability relates to the impact of what we do in the natural environment.

It is the intention of the masterplan for each building to pursue their own strategies but collectively contribute to a Precinct that achieves a 5star through a Green Star Community Rating Tool.

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	GUIDANCE	POINTS AVAILABLE	MASTERPLAN APPROACH	CONSULTANT REQUIREMENTS	COMMENTS
Governance								
Green Star Accredited Professional	To recognise projects that engage a Green Star Accredited Professional to support the Green Star certification process.	1.0	Green Star Accredited Professional	Accredited Professional on project, for full duration of project.	1	1	Needs GSAP appointed to deliver submission (allow \$50K)	dsquared are the sustainability consultants in the Dugurrdja Precinct team, responsible for the ESD solutions and Green Star certified outcome. The Dugurrdja Precinct masterplan will achieve a 6 Star Green Star outcome, as shown in this Green Star plan.
Design Review	To encourage and recognise projects that undertake a design review process designed to facilitate sustainable urbanism.	2.1	Site Planning and Layout	Needs two reviews early in Planning / Design Phase, preferably independently. By experts. 2 points in- house, 3 points mixed, 4 points fully independent.)	4	3	Needs design review to proceed	These credits require that regular reviews (2 points in-house, 3 points mixed, 4 points fully independent) are carried out of public realm, masterplan and built form.
		2.2	Urban Design		4	3		
Engagement	To encourage and recognise projects that develop and implement a comprehensive, project specific stakeholder engagement strategy early in the planning process to inform the planning and design of the plan for development.	3.1	Stakeholder Engagement Strategy	Undertake extensive engagement with the local community and relevant stakeholders. Strategy then Implementation with reviews required.	3	3		The project team will be required to undertake extensive engagement with the local community and relevant stakeholders.
		3.2	Strategy Implementation	Write and use an Engagement Implementation Plan.	3	3		
Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	4.1	Climate Adaptation	Develop a Climate Adaptation Plan (CAP) (via consultant). Incorporate solutions. e.g. extensive landscaping, light coloured surfaces to minimise heat island effect and shading as a climate refuge.	2	2	Needs consultant engaged to deliver CAP (allow \$8K)	A Climate Change and Adaptation plan will need to be developed for the community, to ensure community resilience and climate readiness. The masterplan strategies include extensive landscaping, light coloured surfaces to minimise heat island effect, and the central courtyard providing outdoor space and shading as a climate refuge.
		4.2	Community Resilience	Develop a Community Resilience Plan (CRP) (via consultant) to address preparation, during- and post-disaster communication, safety, and response.	2	2		
Corporate Responsibility	To encourage and recognise projects with a project applicant that has corporate responsibility as a core value.	5.1	Corporate Responsibility	Project applicant need a corporate responsibility policy and to report publicly against it annually.	1	1		JCU corporate policies may meet the intent of this credit - subject to review.
		5.2	Sustainability Reporting	Undertake sustainability reporting annually in accordance with the GRI Sustainability Reporting Guidelines.	2	2		
Sustainability Awareness	To encourage and recognise those projects that enhance knowledge and understanding of its sustainability attributes.	6.1	Community Users' Guide	Write a guide. Distribute/display (online/paper).	1	1		A Community Guide will be required to ensure that all new building occupants have access to information on the sustainability features. This can be an online portal. The second credit relates to the provision of a facility dedicated to sustainable education - this can be claimed through the learning and research on display, if related to sustainability.
		6.2	Sustainability Education Facilities	Provide space to educate the public on sustainability/ features.	1	1		

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	GUIDANCE	POINTS AVAILABLE	MASTERPLAN APPROACH	CONSULTANT REQUIREMENTS	COMMENTS
Governance								
Community Participation and Governance	To encourage and recognise projects that establish mechanisms for community management arrangements for facilities and programs.	7.1	Community Facility Management	A community led entity to be responsible for the coordination of at least one community facility (space).	1			This credit requires the establishment of a community led entity that is responsible for the management and/or coordination of at least one community facility and one community program or service.
		7.2	Community Program Management	A community led entity to be responsible for the coordination of at least one program or service. E.g. WeedBusters	1	1		
Environmental Management	To encourage and recognise the adoption of formal environmental management practices.	8.1	Environmental Management System	All contractors with a contract value of > \$5 million have an ISO 14001 EMS.	1	1		The head contractor for all precinct works will be required to have an ISO14001 certified Environmental Management System.
		8.2	Environmental Management Plan	Developer to require a comprehensive, project-specific EMP for construction works.	1	1		
Total					28	23		
Liveability								
Healthy and Active Living	To encourage and recognise projects that promote healthy and active living.	9.0	Minimum Requirement - Footpaths	Provide sufficient footpaths in line with street hierarchy	-	Y		The Dugurrdja precinct will need to include facilities to encourage active lifestyles and work/life balance. This can include amenities located outside of the precinct boundary that are within walking distance, as long as these are available freely to site occupants.
		9.1	Active Lifestyle	Promote an active lifestyle, through well designed walking paths and cyclist facilities	2	2		
		9.2	Recreational Facilities	All habitable buildings have easy access to both a local park (400m) and at least one publicly accessible sports facility (within 800).	2	2		
		9.3	Healthy Places	Bonus point if 9.1 and 9.2 achieved. Design for healthy living. Use planning tool checklist.	1	1		
Community Development	To encourage and recognise projects that engage in and facilitate the development of the project's community.	10.0	Minimum Requirement - Community Development Plan	Create a CDP.	-	Complies		This credit requires the provision of a community development plan, and community curation officer who will assist in the management and organisation of events and the community portal. The shared urban space will connect the users and invite community participation.
		10.1	Community Development Officer	Officer is employed to implement the Community Development Plan (min. 1 day/week from first occupancy and for 30%+ of the construction program).	1			
		10.2	Community Group	Community group is established and contributes to the implementation of the Community Development Plan.	1			
		10.3	Community Events	Run free community events throughout. Evaluate, improve, repeat.	1	1		
		10.4	Community Information	Fully distribute orientation pack/information.	1	1		
Sustainable Buildings	Certified Non-Residential Buildings	11.1	Certified Non-Residential Buildings	Credit for other Certifications (Green Star, LEED, WELL).	4	2	Cost of certified buildings applies to each building, not masterplan	Points are awarded here for the percentage of Green Star, LEED or WELL rated buildings in the precinct. All JCU assets will be rated. Consider development of a design guideline for buildings.

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	GUIDANCE	POINTS AVAILABLE	MASTERPLAN APPROACH	CONSULTANT REQUIREMENTS	COMMENTS
Governance								
Culture, Heritage and Identity	To encourage and recognise projects that celebrate and incorporate the heritage, culture and historical context of the project site, supporting communities and places with the development of a sense of place and identity.	12.1	Understanding Culture, Heritage and Identity	Cultural Heritage plan as part of the masterplan.	1	1	Needs engagement of a cultural consultant	This requires provision of a Cultural Heritage plan as part of the masterplan. This is one of the key design principles for the project '3. Connections to Country should be considered and co- designed with community.'
		12.2	Enhancing Community Culture, Heritage and Identity	Implementation of the plan.	2	2		
Walkable Access to Amenities	To encourage and recognise projects that have walkable access to a diverse number of amenities that reflect the predicted demographic of the project's community.	13.1	Walkable Access to Amenities	Diverse number of amenities are within close and easy access of all habitable buildings (400m; 800m).	2	2		The location and access to amenities in Cairns will allow for full points to be claimed here.
Access to Fresh Food	To encourage and recognise projects that have access to fresh food locally.	14.1	Access to Fresh Food	All habitable buildings are within a walkable distance (800m) to a source of fresh food.	1	1		The first point is about accessing fresh food within walking distance. The second point requires a veggie garden or urban farm on site.
		14.2	Local Food Production	100sqm of productive landscape per 1000 residential occupants of the project; within 800m.	1			
Safe Places	To recognise projects in which the activity of planning and detailed design for land use, development and redevelopment takes into consideration designing out crime principles.	15.0	Minimum Requirement - Visibility	End to end visibility (tunnels, playgrounds etc).	-	Complies	Needs engagement of planner to carry out CPTED review	The masterplan will be developed in accordance with CPTED design principles. This is one of the key design principles for the project '4. The precinct shall be generous and welcoming and highly permeable, with clearly defined way finding, secure and safe.'
		15.1	Design for Safety	Complete and incorporate a Crime Risk Assessment in accordance with CPTED.	2	2		
Total					22	17		
Economic Prosperity								
Community Investment	To encourage and recognise projects investing in infrastructure within the development for community benefit.	16.1	Community Infrastructure Investment	Build optional community infrastructure e.g. extra parks, courts, childcare, art, healthcare. \$4000/unit. QS.	4	4		Credit is given for spend on community infrastructure. Hospitals and healthcare facilities count towards this credit.
Affordability	Non - Residential Affordability Strategies	17.2	Non- Residential Affordability Strategies	Implement two strategies.	4			This is likely not applicable to the site as it involves creating incentives to attract businesses to the area.
Employment and Economic Resilience	To encourage and recognise projects with local and diverse employment opportunities.	18.1	Net Percentage Increase of Local Jobs	Demonstrate the development will result in a net percentage increase in the number of jobs generated in the local area. Economic Study required.	1	1		This precinct will generate a large increase in local employment opportunities.
	NCC Class mix – Prescriptive Pathway	18.2B	Proximity to Major City – Prescriptive Pathway	1 point where the project is located within 5km of a CBD/ major city centre.	1	1		
Education and Skills Development	To encourage and recognise projects that have access to further education and/or provide a skills and industry capacity development opportunities.	19.1	Higher Education Facilities	1 point where near two Higher Ed. Facilities.	1	1		JCU 's facility will meet this credit criteria.
		19.2	Skills Development Programs	Deliver a skills development program(s) to at least two.	1	1		
		19.3	Industry Capacity Development	Influence those in the sustainable dev. Industry via investment/initiatives.	1	1		
Return on Investment	To encourage and recognise holistic methods to assess the return on investment in response to the sustainability goals for the project.	20.1	Analysis of Direct Costs and Benefits	Use cost and benefit analysis methods to assess ROI from optional investment items. By Economist.	1		Consultant to carry out a economic CBA	Points are available where projects apply cost and benefit analysis methods in assessing return on investment from optional investment items.
		20.2	Analysis of Indirect Costs and Benefits	Per above, with a wider scope (boundary).	1			
Incentive Programs	Non-residential Incentives	21.2	Non-residential Incentives	Provide/fund financial sustainability related incentives.	2			This is likely not applicable to the site as it involves creating incentives to attract businesses to the area.

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	GUIDANCE	POINTS AVAILABLE	MASTERPLAN APPROACH	CONSULTANT REQUIREMENTS	COMMENTS
Governance								
Digital Infrastructure	To encourage and recognise projects that use digital infrastructure to create greater efficiencies in the connection of individuals with other people, goods, services, and information.	22.1	High-speed Broadband	Provide Broadband (agreement & design) for occupants	1	1		High speed broadband and public wifi will be delivered to the whole precinct.
		22.2	Wireless Local Area Network	Add Public WiFi in at least one Activity Centre	1	1		
Peak Electricity Demand	On-site Generation – Prescriptive Pathway	23A	Reduced Peak Electricity Demand - Performance Pathway	2 points where the project's predicted peak electricity demand has been reduced by 25%	2	2		Peak energy will be reduced through a combination of energy efficient buildings, all-electric developments and solar PV.
		23B.i	On-site Generation – Prescriptive Pathway	2 points where at least 30% of the annual electrical energy needs are met through on-site power generation				
		23B.ii	Energy Storage – Prescriptive Pathway	2 points where at least 25% of the peak electricity demand is shifted to non-peak times through the				
Total					21	13		
Environment								
Integrated Water Cycle	Water Sensitive Urban Design – Performance Pathway	24A.1	Stormwater – Performance Pathway	2 points where best practice stormwater management is undertaken: a. Stormwater discharge less than pre- development. b. Stormwater discharge pollutants are minimised. Consider: 1. stormwater reuse (including roof collection and use); 2. Infiltration to native soils, or otherwise, filtered through an appropriately designed soil and plant 3. stormwater treatment system, such as bio- retention; 4. stormwater evapotranspiration; and/or Water detention.	3	3	Civil engineer to prepare a stormwater strategy (required for Council approvals anyway)	The proposed stormwater approach is to celebrate water as a resource and a means to create cool urban spaces, through a combination of irrigated landscaping, using Salisbury Water recycled stormwater, and a WSUD approach to on site water retention and reuse. This includes two detention basins to treat stormwater, and a permanent water body suitable for water play and urban cooling.
		24A	Water Sensitive Urban Design – Performance Pathway	Up to 5 points where potable water consumption is reduced (through the application of the principles of Water Sensitive Urban Design (WSUD))	3	3		
Greenhouse Gas Strategy	Greenhouse Gas Strategy – Performance Pathway	25A	Greenhouse Gas Strategy – Performance Pathway	Up to 6 points based the predicted reduction in GHG emissions from energy used, when compared against a reference project.	6	6	ESD consultant to prepare an energy strategy	The Dugurrdja precinct will be 100% electric, with no fossil fuels used on site. This is to allow for the buildings to be provided with 100% renewable electricity for all of their energy needs through an embedded energy network.
Materials	To select materials that have a reduced embodied impact.	26B	Life Cycle Impacts – Prescriptive Pathway	Up to 5 points where a. minimum requirements are met b. LCA shows reduced environmental impact	3	2		The Dugurrdja Precinct team are looking at several ways to reuse materials and reduce the embodied energy in the public realm.
Sustainable Transport and Movement	To encourage design and implementation of initiatives that reduce the impact of transport.	27A	Sustainable Transport and Movement: Prescriptive Pathway	3 points for integrated responses to transport and movement that encourage a people-focused hierarchy. i.e. Reduce the dependence on single vehicle transport for travel etc Demonstrate the design has various transport options e.g. paths, End of Trip facilities, public transport connections.	2	2	Transport planner to prepare a sustainable transport plan	Shared End of Trip facilities will be provided to ensure sustainable transport options are available to future building occupants.
Sustainable Sites	To encourage projects that avoid or minimise impacts on environmentally sensitive sites while recognising projects that reuse previously developed land and reclaim contaminated land using best practice remediation.	28	Conditional Requirement	If any EPBC requirement, must comply.	-	Y		Contamination to be dealt with in accordance with best practice guidelines.
		28.1	Previously Developed Land	1 point where 75% of the project site comprises previously developed land.	1	1		
		28.2	Best Practice Site Decontamination	1 point where the site contains significant contamination and is remediated using best practice	1	1		

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	GUIDANCE	POINTS AVAILABLE	MASTERPLAN APPROACH	CONSULTANT REQUIREMENTS	COMMENTS
Governance								
Ecological Value	To encourage and recognise projects that enhance the ecological value of the project site.	29.1	Change of Ecological Value	1 point where the ecological value of the site is enhanced by >20% (use calculator)	1	1		The proposed landscaping strategy will significantly improve the biodiversity of this site, and will focus on biophilic design principles and 'tropical urbanism, as per the planning principles.
		29.2	Biodiversity Enhancement	1 point for a Biodiversity Management Plan (BMP)	1	1		
Waste Management	To encourage and recognise projects that reduce the environmental impact of waste.	30.1	Construction, and Demolition Waste	1 point for implementing a Waste Management Plan (WMP) and recycle/reuse >60%	1	1	Needs Waste Management Plan (can be by waste contractor)	Centralised waste management facilities will be provided.
		30.2	Operational Waste	1 point for implementing three strategies: A. Public place recycling scheme; B. Residential recycling scheme;	1	1		
Heat Island Effect	To encourage and recognise projects that implement measures to reduce heat island effect.	31.1	Heat Island Effect	1 point where at least 50% of the total site is reflective. Consider reflective roof materials (generally lighter colours), less hard landscaping/roads, shading.	1	1		The heat island effect will be managed through the landscaping strategy and light coloured roofs.
Light Pollution	To encourage and recognise projects that minimise the adverse impact of light emissions.	32.1	Light Pollution	1 point where 95% all external public lighting luminaries within the project site boundary have an Upward Light Output Ratio less than 5%.	1	1		No lights will be directed into the night sky.
Total					25	24		
Innovation								
Innovative Technology or Process	The project meets the aims of an existing credit using a technology or process that is considered innovative in Australia or the world.	33A	Innovative Technology or Process	The project meets the aims of an existing credit using a technology or process that is considered innovative in Australia or the world.	10	2		A minimum of 6 points to be targeted. Innovations include: - Designing for wellbeing - Green space/climate refuge - Public artwork - Financial transparency (sharing additional Green Star cost information with the GBCA) - Marketing excellence (promoting the sustainability aspects of the project) - Local and ethical procurement (using local and aboriginal trades where possible)
Market Transformation	The project has undertaken a sustainability initiative that substantially contributes to the broader market transformation towards sustainable development in Australia or in the world.	33B	Market Transformation	Undertake a sustainability initiative that substantially contributes to the broader market transformation towards sustainable development in Australia or in the world.				
Improving on Green Star Benchmarks	The project has achieved full points in a Green Star credit and demonstrates a substantial improvement on the benchmark required to achieve full points.	33C	Improving on Green Star Benchmarks	Extra points for significantly exceeding any basic Credit		2		
		33D	Innovation Challenge	Demonstrate compliance with the listed Innovation Challenges		2		
Global Sustainability	Project teams may adopt an approved credit from a Global Green Building Rating tool that addresses a sustainability issue that is currently outside the scope of this Green Star rating tools.	33E	Global Sustainability	Demonstrate compliance with an approved credit from another World Green Building Council (WGBC) member rating tool				
Total					10	6		

TOTAL	POINTS AVAILABLE	POINTS TARGETED
	105	82