# EATER RTIN AGE ONE EVELOPMENT GUDELINES

STAGE ONE | CREATING THE CITY PART A | OF INNOVATION



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#### **Document Control**

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#### **EXECUTIVE SUMMARY**

Greater Curtin Stage One represents a dynamic shift

in how the University has traditionally functioned. This new trajectory will see the teaching, learning and research experience expanded to transform Curtin into a multipurpose destination where everyone is welcome. A dedicated and sustained focus that complements this paradigm shift will be essential across all areas of the business to realise this vision beyond "bricks and mortar".

#### HARNESSING THE POTENTIAL OF INNOVATION

Innovation has long been part of Curtin's DNA. A reputation built on strong connections with industry and 'work ready' graduates has given Curtin a competitive edge. Now, a growing awareness and appetite for innovation and entrepreneurship across all levels of business, politics and education has made Curtin's point of difference a very real and valuable commodity.

Since early days as Perth Technical School, Curtin has been at the forefront of innovation. Greater Curtin Stage One offers an opportunity to further differentiate from emerging competitors. However, this rapidly shifting landscape brings a need to respond quickly. Greater Curtin Stage One will bring the University's work into the public realm and demonstrate tangible commitments to innovation – from cutting edge research, industry partnerships, ideas generation, experimentation and commercialisation, through to redefining the Campus lifestyle, in a modern, relevant, technologically smart and connected urban setting.

#### **CULTIVATING BENTLEY'S URBAN HEART**

Through Stage One, Curtin will be 'first to market' in Western Australia, delivering a dedicated Innovation Precinct experience that meets the needs of all key groups, including domestic and international students; University staff; surrounding residents; visiting researchers and academics; alumni; and, commercial partners.

Ultimately, people drive the innovation lifecycle. It's their imagination, creativity and connection that Greater Curtin will need to stimulate and serve in order to succeed as a place that inspires and ignites ideas. Opportunities to expand personal and business networks and develop commercial partnerships that sustain economic activity will be a key attraction.

The long term vision, is for Greater Curtin to become Bentley's urban heart.

International research is confirming that in addition to creating a mixed-used urban place, the delivery of programs and initiatives and fostering of networks is imperative in the cultivation of success. A commitment to resourcing, programming and curating the social networks that breed innovation and creativity will need to be a key component of Greater Curtin Stage One. Greater Curtin is driven by the desire to disrupt 'business as usual.'

#### A FUTURE FOCUSED STRATEGY

These Development Guidelines clarify Greater Curtin Stage One's unique urban purpose, the visitor promise and the place experience.

Existing and planned campus activity generators such as the Academic Neighbourhood, Student Accommodation, Bus Interchange, Curtin Stadium and retail space will be leveraged to deliver five key public places within the precinct – each with supporting attractions. These places will enable people to "Experience Innovation" at every turn. As a result, Greater Curtin Stage One will:

- Showcase innovation and visibly demonstrate 'Curtin life'
- Provide a dedicated focal point for social and networking activity
- Deliver a holistic focus on wellbeing and 'life learning' to support innovation and creativity
- Deliver the urban experience that will attract people (comprised of a range of places to live and work; and, a bespoke Main Street retail, food and beverage mix, comfortable green spaces, public transport, student services and support).

The success of Stage One will require the extension of Curtin's existing programs and services such as innovation, entrepreneurship and accelerator programs; business partnerships; the Place Activation and Management Program; Student Support Services; and, Curtin Stadium programs.

Additionally, noting that traditional development timeframes may not deliver the full suite of Innovation Precinct activities in the short term, Curtin will implement interim strategies to activate the place, facilitate connections between Stage One and the Academic Neighbourhood and attract start up commercial and research partnerships.

Finally, Greater Curtin Stage One will allow, and depend upon, the repositioning of the University as a vibrant multipurpose destination that is open to all visitors, year round.

#### **GREATER CURTIN STAGE ONE**

The diagram opposite shows an indicative development scenario for the Greater Curtin Masterplan.

The dashed boundary highlights an indicative development scenario for Greater Curtin Stage One. Future stages of the Greater Curtin Masterplan are shown as transparent blocks.







#### **HOW TO USE THIS DOCUMENT**

#### **CH 1: INTRODUCTION**

• Outlines the urban purpose and vision for the unique offering that is Greater Curtin.

#### **CH 2: STAGE ONE OVERVIEW**

- Provides an overview of the structuring elements of Greater Curtin, which the Stage One development will respect and reinforce.
- Provides an overview of the key components of Greater Curtin Stage One, building a picture of *what success will look like*.

#### **CH 3: PRECINCT GUIDELINES**

• Outlines the necessary Objectives and Development Criteria that Developers will need to address to achieve the vision set out in Chapters 1 and 2.

#### **CH 4: LOT-SPECIFIC GUIDELINES**

• Describes each Place and Development Lot, and the specific requirements which apply in addition to the Precinct Guidelines in Chapter 3.

#### **CH 5: WORKING WITH CURTIN**

• Outlines the key requirements and conditions for the formulation, review and approval of development plans within Greater Curtin Stage One.

#### **RELATIONSHIP TO MASTERPLAN**

The Development Guidelines aim to maintain the vision of the Greater Curtin Masterplan, whilst providing a framework for developers working within Greater Curtin Stage One.

The Development Guidelines are intended to be the first in a series of 'Neighbourhood' documents which translate the Greater Curtin Masterplan Books A, B and C into specific requirements for each stage of development.

Certain information in the Greater Curtin Masterplan Books A, B and C has been under further development since publication. The Development Guidelines for Greater Curtin Stage One shall prevail to the extent of any inconsistency.

THE GOAL	THE WHY	THE WHAT	THE HOW	NEIGHBOURHOODS
GREATER CURTIN VISION	GREATER CURTIN DRIVERS FOR CHANGE	GREATER CURTIN MASTER PLAN	GREATER CURTIN DELIVERING THE VISION	GREATER CURTIN STAGE ONE DEVELOPMENT GUIDELINES
<ul> <li>Establishes the vision for Greater Curtin</li> <li>Provides a high level introduction to the Masterplan</li> <li>Sets out the intent for the future city.</li> </ul>	<ul> <li>Establishes the starting point for the project</li> <li>Sets out the drivers for the evolution of the university into a city</li> <li>Provides a clear understanding of the key decisions taken – the rationale and</li> </ul>	<ul> <li>Illustrates and defines the framework for the future city</li> <li>Defines the key structuring elements of the future city</li> <li>Establishes the key strategies and initiatives proposed to</li> </ul>	<ul> <li>Provides an instruction manual for the detailed delivery of the Masterplan</li> <li>Provides overall design guidance.</li> </ul>	<ul> <li>Provides detailed guidance on built form and development standards for the Stage One precinct within the Masterplan.</li> </ul>
	outcome.	deliver the vision for Greater Curtin.		

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# 1.0 INTRO-DUCTION

"The Great University... should look ever forward: for it the past should be but a preparation of greater days to be."



#### 1.1 THE URBAN PURPOSE

As a place for teaching, learning and research, Curtin University has long been a forerunner in catalysing innovation. Curtin's recent partnerships with Cisco's Internet of Everything, the Square Kilometre Array, Pawsey Super Computer, and EdEx are international collaborations that exemplify the University's 'Make Tomorrow Better' spirit through innovation.

This has always been part of Curtin's DNA, along with a reputation for understanding that industry needs savvy, 'job ready' graduates, and access to the creative minds and talent that deliver cutting edge research and solve complex problems.

To retain and extend a competitive advantage as a modern, relevant university Curtin University must continue to evolve. Today, the trajectory is to extend a traditional offer by developing into a new, multidimensional place, leveraging the University's resources and creating a new urban heart for Bentley and its community. This is Greater Curtin, a 'City of Innovation' that offers people – be they staff, researchers, students, community members or employees from a variety of industries – the opportunity to learn, live, work, and 'play' in a sustainable place where knowledge and innovation extend beyond buildings.

Stage One of Greater Curtin is the start of this transformation – blending the University's best with an enviable urban lifestyle, in a place where everything is at your fingertips. A hip apartment to live in, easy and efficient transport, state-of-the-art sporting facilities, places to eat, drink and shop, all supported by a strong social scene. As a melting pot for research and industry, it is a place to work, learn and grow your global network, taking inspiration from some of the world's most innovative and thought-provoking projects.



Curtin's vision is underpinned by three key elements:

#### **1. OUR ENABLED ECONOMY**

A prosperous economic hub that encourages and facilitates business diversity, innovation and a resilient local labour market.

#### 2. OUR CONNECTED COMMUNITY

A liveable, diverse, affordable and inclusive community that promotes social interaction and citizen ownership; a community that is safe and caring that focuses on people's wellbeing.

#### **3. OUR LIVING ENVIRONMENT**

An approach that is respectful of the existing environmental systems and seeks to protect and restore our natural assets and implement solutions that reduce ecological footprint.

To facilitate the delivery of these fundamental elements Developers are required to follow a place led-approach where people and their needs are front and centre in project planning, delivery and ongoing management and operation. A strong understanding and demonstration of who will use the place, and their specific requirements, should form the fundamental baseline of the Greater Curtin Stage One development response at both a precinct- and lot-specific level. 1. BACKGROUND AND CONTEXT Consider vision and structuring elements, and benchmark precedents

2. WHO IS OUR AUDIENCE? Analyse and understand key users and their needs

3. WHAT WILL BE ATTRACTIVE TO THEM? Identify key places, facilities and uses

4. HOW WILL THE PLACE AND BUILT FORM WORK TOGETHER? Determine layout, function, uses, activities, access and linkages

5. WHAT ARE THE BUILT FORM REQUIREMENTS AND IMPACTS? Ensure the built form supports the people and their environment

6. WHAT WILL PEOPLE DO THERE? WHY WILL THEY GO BACK? Determine and deliver place management and programming

FIGURE 1/ A place-led approach

#### 1.2 OUR AUDIENCE

Understanding Greater Curtin Stage One users and their needs is essential to shaping the purpose and uses of

the place.		precinct to shop, d	ine, use recreation facilities and		
	DOMESTIC STUDENT	experience Curtin life.			
	<b>Potential Size</b> 2015 Baseline: 16,700 2025 Forecast: 19,600 <b>Time on site</b> 30wks/year	<ul> <li>What they need</li> <li>Study, eat, drink, shop</li> <li>Transport</li> <li>Technology</li> <li>Easy access to facilities</li> <li>Social network, sport and rec</li> <li>Cross functional learning</li> </ul>	<ul> <li>What GCS1 will deliver</li> <li>Blend of university and 'real world'</li> <li>Cool places to socialise &amp; relax – wellbeing</li> <li>Working, meeting, make it spaces; technology</li> <li>Public transport, retail variety</li> <li>Stadium and sporting facilities</li> </ul>		
	INTERNATIONAL STU	INTERNATIONAL STUDENT			
	<b>Potential Size</b> 2015 Baseline: 6,600 2025 Forecast: 7,700 <b>Time on site</b> 30wks/year	<ul> <li>What they need</li> <li>Feel safe, social and cultural network</li> <li>Face to face interaction</li> <li>Technology &amp; fast internet</li> <li>Earning potential/work in Australia</li> </ul>	<ul> <li>What GCS1 will deliver</li> <li>Mix of spaces and sporting facilities</li> <li>Social and support programs</li> <li>A sense of community, wellbeing</li> <li>Value for money</li> <li>Food and retail mix</li> </ul>		
	STUDENT RESIDENT Potential Size 2015 Baseline: 1,200 2025 Forecast: 2,300 Time on site 35wks/year	<ul> <li>What they need</li> <li>A sense of community</li> <li>Evening experiences</li> <li>Value for money</li> <li>Convenience</li> </ul>	<ul> <li>What GCS1 will deliver</li> <li>Student support services</li> <li>Social scene</li> <li>Range of accommodation</li> <li>University programs – wellbeing</li> <li>Retail, food, beverage</li> <li>Stadium and sporting facilities</li> </ul>		
	UNIVERSITY STAFF Potential Size 2015 Baseline: 4,200 2025 Forecast: 4,900 Time on site 40wks/year	<ul> <li>What they need</li> <li>Work variety and interest</li> <li>After work socialising, networking</li> <li>Connections with like-minded people</li> <li>Diverse retail, food, beverage</li> <li>Child care, gym</li> <li>Easy transport options</li> </ul>	<ul> <li>What GCS1 will deliver</li> <li>Co-location of research/enterprise</li> <li>Opportunities to grow professional network</li> <li>Places to meet friends &amp; family after work</li> <li>Fitness and sport, child care</li> <li>Transport and end of trip facilities</li> </ul>		
	RESEARCHER/VISITI Potential Size 2015 Baseline: 270/day 2025 Forecast: 290/day Time on site 40wks/year	NG ACADEMIC What they need • Supervisory talent, networking • Accommodation, social life • Work space, function space, recreation and wellbeing, child care	<ul> <li>What GCS1 will deliver</li> <li>Urban lifestyle in one place</li> <li>Social and business connections</li> <li>Facilities to balance work/ life – gym, child care etc</li> </ul>		

In addition to traditional University audiences, it is expected that local residents and families will visit the



#### **OFFICE WORKER – ON SITE AND NEARBY**

#### **Potential Size**

2015 Baseline: 3,500 2025 Forecast: 4,700

Time on site

bus hrs/all year

- What they need
- $\cdot$   $\,$  Talent and rapid problem solving

· Friends and like-minded people

· Affordability – including office space

• Exposure, networking, business support

- Cultural and brand 'fit'
- Incentives, technology
- Research alignment

What they need

· Access to talent

#### What GCS1 will deliver

- High profile commercial address
- $\cdot$  Variety of flexible work spaces
- $\cdot \;$  Access to talent, entrepreneurial thinking
- Social scene

#### START UPS/ENTREPENEUR

LOCAL RESIDENTS AND FAMILIES

**Potential Size** Captured within office workers (above)

**Time on site** 24/7/365

#### COMMUTER

Potential Size 12,500/day

Time on site vear round

**Potential Size** 

2015 Baseline: 28,700 2025 Forecast: 33,000

(local area estimate)

#### What they need

- · Convenience retail
- End of trip facilities, connected network
- · Safety and comfort, legibility, access

• To feel welcome – their "local place"

· Opportunity to experience Curtin life

· Intergenerational, multicultural,

#### What GCS1 will deliver

- · Access to talent, resources
- Access to support programs/networks
- · Supportive, entrepreneurial spirit
- · Flexibility, technology, resources

#### What GCS1 will deliver

- Transit services and facilities
- A safe and vibrant place
- · Convenience retail, food, beverage

(Å

#### **Time on site** year round

ALUMNI Potential Size

Global network of 200,000

**Time on site** occasional

#### What they need

· Community uses

What they need

· Convenience and access

family-friendly facilities

- · Connection with Curtin
- Profile and recognition
- · Access to talent
- · Opportunities to "give back"

#### What GCS1 will deliver

- Easy access, comfortable amenities
- · Mix of retail and entertainment
- Innovative and attractive public spaces and activities
- · A showcase of University life
- · Community venues sport & social activity

#### What GCS1 will deliver

- · Celebration and recognition
- Dedicated facilities and programs
- Business & research alignment
- Connections and partnerships to "give back"

Sources: Curtin University Retail Advisory Report, Urbis, December 2015; Smart Rider Statistics, Curtin University Greater Curtin Stage One Development Partner Outline September 2015; Curtin University website http://alumni.curtin.edu.au/page.aspx?pid=870; Curtin University Draft Student Personas Report March 2014

## 1.3 HOW WILL THE PLACE LOOK AND FEEL

With innovation at the core of Curtin's DNA, Greater Curtin Stage One will be a place where people can immerse themselves in Curtin life. The opportunity is to deliver a visible demonstration of innovation 'on show,' supported by a strong entrepreneurial culture.

# EXPERIENCE INNOVATION

Showcasing a new university paradigm, Greater Curtin Stage One is always open for business. A place to live, work, learn and create; students and visitors, researchers and entrepreneurs, workers and academics incubate ideas, general vitality and celebrate enterprise.



#### **CREATING AN URBAN EXPERIENCE**

- Creating a strong commercial address
- Being an intimate, comfortable, inviting urban place
- Attracting a mix of people and with different interests
- Delivering a diversity of complementary land uses



**ESTABLISHING A VIBRANT SOCIAL SCENE** 

- Delivering places for people to live on-site, in the short and long term
- Creating a central social heart, with fun activities, music and food
- Delivering a strong social program
- Building a welcoming, involved Curtin community



# COLLABORATING, EXPERIMENTING AND IGNITING

- Forming strong partnerships and networks
- Delivering highly visible innovation spaces
- Growing relationships between industry and research
- Supporting entrepreneurship at every level



#### **BLENDING WORK AND PLAY**

- Being approachable; more casual than corporate
- Enabling open, collaborative work places
- Creating colourful, interactive public spaces to 'bump' and share experiences with a diverse mix of people
- Being open all hours



#### **BEING ACTIVE, HEALTHY AND GREEN**

- Enabling access to fresh, healthy food
- Delivering a network of green buildings and public spaces
- Providing programs and facilities that support health and wellbeing
- Celebrating wa's unique environment and outdoor lifestyle



#### **BREAKING DOWN BARRIERS**

- Deconstructing 'business as usual'
- Valuing a confident, say YES approach
- Catalysing bold ideas and ambition
- Being a place where anything's possible

# 2.0 STAGE ONE OVERVIEW

#### **ABOUT THIS SECTION**

This chapter provides an overview of the structuring elements of Greater Curtin, which the Stage One development will respect and reinforce.

This chapter then provides an overview of the key components that will create Greater Curtin Stage One, building a picture of *what success will look like*.

Three key elements are required to deliver this success and maintain the fundamental principles of Greater Curtin. These are outlined on the following pages:

- Enabled Economy
- Connected Community
- Living Environment

# 2.1 GREATER CURTIN STRUCTURING ELEMENTS

The Greater Curtin Masterplan was developed in 2013. It established a set of structuring elements, outlined on this page, to drive the future development of a cohesive, integrated public realm. The Stage One Development Guidelines have utilised these structuring elements to define key relationships within Stage One that are fundamental in the development of place, built form and infrastructure. This will ensure that as Greater Curtin develops through later stages, the connections established within the Masterplan are maintained.

The diagrams below identify the structuring elements of the Masterplan across the entire campus. The adjacent diagram identifies Greater Curtin Masterplan structuring elements as they relate to Stage One and its immediate surrounds.

The objectives and requirements set out in Chapters 3 and 4 of these Guidelines will ensure that both place and built form respect and reinforce the structuring elements, ensuring connections established in the Masterplan are maintained.



FIGURE 3/ Greater Curtin structuring elements overlaid on the Stage One precinct



#### **MAIN STREET**

Connects the two key points of arrival and activity, and forms a central, organising spine and focus for Greater Curtin. The landscape proposal for Main Street is for a playful and informal structure that supports a variety of activities to achieved the desired dynamism.



#### LIVING STREAM

Forms a third major north-south orientated corridor connecting the Greater Curtin neighbourhoods (with Main Street and the Academic Link being the two other corridors). The Living Stream is focused on cultural interpretation, aquatic and ecological initiatives, including water management, water play and 'biophilic design'.



#### **THE GREENS**

Will provide much of the open space for passive and active recreation at Greater Curtin and are divided into active sport and passive recreation areas.





#### THE LINKS EAST-WEST

Form strong and formal vegetated armatures that connect pedestrians and cyclists from the existing hill-top campus into each development band. They also form a critical part of the water management strategy.



#### **POINTS OF IGNITION**

Are created at the intersection between Living Stream and green links. They are places of intensity and focus across community, educational, commercial and ecological thematic.



#### **CORRIDORS AND CANOPIES**

Build upon the Masterplan structure and movement hierarchy to dictate tree species that will contribute to streetscape and walkway character. Biodiversity links are also integrated through and beyond the site.

#### 2.2 DESIGN PRINCIPLES

The Greater Curtin Masterplan identifies a set of six overarching design principles that have guided the structure of the Stage One Development Guidelines. These principles are relevant to Developers in providing a basis for ensuring their work remains consistent with the intent of the Masterplan. These principles are integral in achieving the three key elements that underpin Curtin's vision, being:

- Enabled Economy
- Connected Community
- Living Environment

#### **ENABLED ECONOMY**

A prosperous economic hub that encourages and facilitates business diversity, innovation and a resilient local labour market.



#### LIVING LABORATORY

The evolution of the city, its design, construction and life will provide a focus for education and life-long learning, leveraging off academic and research opportunities, and providing platforms for collaboration, innovation and the exchange of knowledge. The evolution and delivery of the Masterplan will provide opportunities to draw on the knowledge and experience of its resident communities.



#### **PLATFORMS FOR PARTNERSHIPS**

The approach to placemaking and architecture is embedded in this concept, promoting the delivery of spaces that facilitate knowledge networks, establishing spaces for interaction and community and an attitude to architecture of open plans, enabling the evolution of a city that thrives on collaboration, diversity and innovation.

#### CONNECTED COMMUNITY

A liveable, diverse, affordable and inclusive community that promotes social interaction and citizen ownership; a community that is safe and caring that focuses on people's wellbeing.



#### **COLLECTION OF CULTURES**

Greater Curtin will be home to a diverse and integrated community. It will be a vibrant place characterised by intimate, local, human scale neighbourhoods with easy access to everyday needs. It will be an environment that enables its residents to live, work and play in Greater Curtin.



#### **NETWORKED COMMUNITIES**

Embedded within the Greater Curtin structure is an integrated urban movement network that provides access to convenient and attractive public transport with transitenabled streets that are safe, walkable and cycleable. This network will extend strong links beyond the city, effectively connecting the Greater Curtin community to its neighbourhood, to Perth and into the region.

#### LIVING ENVIRONMENT

An approach that is respectful of the existing environmental systems and seeks to protect and restore our natural assets and implement solutions that reduce ecological footprint.



#### **DISTINCTLY CURTIN**

Greater Curtin will grow from established foundations. The distinctive characteristics of its land and cultures provide the building blocks for the future city, establishing the framework for the evolution of a place that is responsive and respectful of its heritage, looking forever forward from its past.



#### **GREATER SYSTEMS**

The Masterplan for Greater Curtin embeds a progressive strategy to achieve sustainable development outcomes. Feeding and supporting the future city is a network of integrated infrastructure systems designed to anticipate the growth of the future city, supported by strategies that enable adaptation to accommodate innovation in services provision.

#### 2.3 STAGE ONE OVERVIEW

#### **ENABLED ECONOMY -ACTIVITY GENERATORS**

Key activity generators will provide the platform for the establishment of the enabled economy within Greater Curtin Stage One. A number of these activity generators are existing or are currently under development parallel to Stage One development:

- Academic Neighbourhood
- Curtin Stadium and Sporting Facilities
- Bus Interchange

Under the control of these Development Guidelines, the built form on Stage One development lots will house new activity generators:

- Living
- Retail and Commercial

In total, Greater Curtin Stage One is comprised of eight development lots, with six further lots slated for future development, as shown in the adjacent diagram. Achieving world-class standards in the design and construction of built form will be essential to achieving success.

#### **CONNECTED COMMUNITY – PLACES**

To create a connected community, key Places have been identified as part of Greater Curtin Stage One. It is intended that these will be the drivers for attracting and retaining residents, workers, students and visitors to the precinct.

The diagram on this page shows these five key Places, each with a unique vision and character, which are described later in this chapter.

#### LIVING ENVIRONMENT

The backbone of Greater Curtin Stage One is the existing and future infrastructure systems and the cultural frameworks of Curtin University. The masterplan for Greater Curtin embeds a progressive strategy to achieve sustainable development outcomes that acknowledge Curtin's place within its environment and wider cultural context. Collaboration and integration of research is an essential part of the Living Environment strategy.







# 2.4 ENABLED ECONOMY – ACTIVITY GENERATORS

#### 2.4.1 ACADEMIC NEIGHBOURHOOD

The Academic Neighbourhood houses Curtin University headquarters, providing high quality transformative educational experiences, engaging in research and creative practice, and contributing to building a sustainable and prosperous community. It integrates the multiple dimensions of the institution and its surrounding context, from its unique history and culture to its strategic vision for its physical assets, operational needs, and changing pedagogies and technologies.

The University has benefited from rational and highquality development throughout its history. This has resulted in a unique physical experience that in recent years has been enhanced through a place-led approach to campus development and place activation programs. For example, the Academic Neighbourhood includes one of the largest and best-equipped university galleries in the country, the John Curtin Gallery.

As the University grows and Greater Curtin Stage One is delivered, the Academic Neighbourhood will continue to be Curtin's centre of gravity.

# 2.4.2 CURTIN STADIUM & SPORTS FIELDS

Curtin Stadium is the University's major sports and events venue. It features a large multi-purpose indoor arena with tiered seating for 1,850 people. The building also includes a seminar room for 40 people, meeting rooms, cafe, and a large undercover area.

Stage One of Greater Curtin separates the Stadium from the northern sports fields. It is imperative that the link between the stadium and the ovals is maintained and strengthened by the Stage One development - refer to 2.5.4 Outdoor Common Room for further detail. Objectives to achieve these requirements are set out in Chapters 3 and 4.

#### 2.4.3 BUS INTERCHANGE

The Curtin Bus Interchange project is a key component of the Greater Curtin Masterplan and will be delivered by Curtin and the Public Transport Authority by 2018. The interchange will provide a regional public transport hub co-located adjacent



FIGURE 5/ Activity generators

to the future light rail service. The facility aims to encourage an increased uptake of public transport and subsequent pedestrian traffic. It is projected that when opened, the interchange will accommodate 130 bus movements in the peak hours, catering for 12,500 daily commuters.

The bus interchange will play a key role in introducing an increased number of people into the precinct, supporting the economy of surrounding retail and amenity.

#### 2.4.4 **LIVING**

Greater Curtin Stage One will provide a variety of living opportunities for students, researchers and professionals, offering the day-to-day needs of a thriving community. The population of Greater Curtin Stage One will be comprised of approximately 2,000 new dwellings. These will be centred in Lots F01, 02, 03, 04 (apartment living), F05 (short stay accommodation/hotel) and F07 (Halls of Residence). Refer to Chapter 4 for more detail on specific Development Lots.

The variety of accommodation types will be reflected through a vibrant and diverse architectural response

that positively contributes to the urban landscape whilst providing activation of the surrounding places 24 hours a day 365 days a year.

## 2.4.5 RETAIL & COMMERCIAL

Introducing new retail and commercial uses at Greater Curtin Stage One is key to diversifying from a traditional university campus to a multi-purpose destination. The retail vision and intent is to achieve a curated Main Street shopping experience that directly responds to the range of visitor needs and aligns with Curtin's brand.

The curated retail offer will be primarily located in Lots F04, 05, 06 and in F11.

The commercial vision is to become a strategic, high profile business address with commercial uses that align with Curtin's innovation and research platform, providing opportunities to grow the University's entrepreneurial culture. Located within Lots Fo5 and Fo6, these sites can also accommodate smaller scale innovation incubator, collaborative working and 'make it' spaces, as can Lots Fo3, Fo4 and F11.



Curtin Stadium main arena

Indicative Greater Curtin development

# 2.5 CONNECTED COMMUNITY – PLACES

#### 2.5.1 CURTIN SHOWCASE

The social heart of the precinct, Curtin Showcase comprises a network of buildings and spaces with their own character – the Curtin Dome, Lot F11 development and Pine Plaza. Curtin Showcase directly interfaces the Bus Interchange and the Main Street providing a major pedestrian link between the transit hub and the Academic Neighbourhood. The space puts Curtin life 'on show' and is open to everyone.

Lot F11 is intended to be the focal point for people to 'experience innovation', and the social heart of the Stage One precinct. The built form and functional requirements are currently under development. The ground floor experience will be a seamless indoor/outdoor crossover, spilling activity north into Pine Plaza and south to Lot F12.

The Curtin Geodesic Dome was designed by WA architect Graham Harler in the style of Buckminster Fuller. It is anticipated that the dome will be restored and redeveloped in parallel to Lot F11 to support social interaction and connections between the university, its alumni, research activities and commercial partnerships. The extent and timing of the redevelopment is at Curtin's discretion.

#### **ATTRACTION: PINE PLAZA**

Pine Plaza will be both a transit plaza and an informal meeting place. The existing pine tree stands that characterise Curtin University's authentic landscape will be a prominent feature, bringing shade and amenity.

#### 2.5.2 MAIN STREET

As the formal entry into the Stage One precinct and focus for retail activity, it is envisaged that Main Street will feature a tailored mix of retail, amenity, food and beverage. Main Street will be a distinctly local urban scene, taking inspiration from successful Perth main streets such as William Street Northbridge and Oxford Street Leederville. Provision for a future light rail stop is located in the centre of the street, with this space used as a programmable event space in the interim.

#### **ATTRACTION: THE GREEN @ MAIN STREET**

Located in the centre of the northern end of Main Street, the Green is a semi-permanent programmable space, able to host interim uses such as food trucks, market stalls, temporary outdoor furniture and games.

#### 2.5.3 INNOVATION STREET

Innovation Street will be a lively urban street with slow traffic and bespoke street art, banners, neon lighting and furniture.

It will be framed by permeable ground floors and uses such as food and beverage, collaborative/meeting spaces, make-it studios and other visible activities.

#### 2.5.4 OUTDOOR COMMON ROOM

Located between Lots Fo3 and Fo4, the Outdoor Common Room provides a strong link between living, the bus interchange and Curtin Stadium, as well as playing fields to the north. It is the recreation, health and wellbeing focal point for the precinct and also supports social activity, meetings and student life.

It is characterised by uses including outdoor games zones, smaller wellness spaces and its interface with communal ground floor uses (meeting rooms, laundromat etc).



Indicative Greater Curtin development

#### **ATTRACTION: THE LOUNGE**

The Lounge will be delivered by Curtin/PTA as part of the bus interchange project. It is a small gathering/waiting space in the centre of the bus interchange with a variety of seating and outdoor furniture that enables small groups to sit together, or people to sit, stand and continue working. The space will also include feature landscaping, and amenities for bus drivers and passengers. It is part of an active link between the Outdoor Common Room, Play Space and Curtin Stadium.

#### 2.5.5 THE PLAY SPACE

The Play Space will be a semi-permanent recreation breakout space located to the northern edge of Curtin Stadium, that activates the Stadium facade and accommodates complementary activities. The vision includes half courts that could be used for mini tournaments, skateable furniture, a tennis wall and space to hang out and play music. It will be an informal place designed to encourage meeting, socialising and connections.

#### **ATTRACTION: THE LIVING STREAM**

The Living Stream is part of the Greater-Curtin-wide structuring landscape feature that supports cultural, recreational, educational, aesthetic and environmental values and experiences. In addition to its functional purpose to convey and filtrate stormwater, the Living Stream connects the precinct to the local natural environment and heritage through expression of local indigenous culture, innovative biophilic and watersensitive urban design and interpretation of historic paleochannel and former wetlands.



# 2.6 LIVING ENVIRONMENT

#### 2.6.1 FUTURE SYSTEMS

Curtin University is committed to the establishment of coherent, adaptive and integrated strategies for the development of a sustainable infrastructure network, referred to as 'Future Systems'.

The objectives and requirements in Section 3.4 Responsiveness outline the requirement for developers to demonstrate innovation in achieving resource reduction and targeting self-sufficiency, and provide a positive contribution to the Future Systems network.

Greater Curtin Stage One offers Developers a unique opportunity to achieve these aims. Curtin guarantees security of supply of services and utilities, and provides opportunities for innovative collaboration and research partnerships.

The Greater Curtin Masterplan is certified as a 5-Star Green Star Community, the first in Australia. Refer to 3.4.1 Green Star Communities for more detail on the responsibilities and opportunities this certification offers for Developers.

## 2.6.2 **CULTURES**

Greater Curtin Stage One will provide development that demonstrates an understanding of cultures past and present.

Curtin University occupies a landscape associated with the Beeloo people. The water features and hilly aspect of the area are of significance to Aboriginal people and a Dreaming Trail crosses the land. Refer to 3.2.2 Living Stream and Dolphin Dreaming Trail Interpretation for more detail, objectives and requirements.

The distinctive architectural language of Curtin's key campus buildings provide reference points for an architectural palette for Developers, to ensure future works reference and are sympathetic to the existing built environment of the campus. Refer to 3.2.4 Materials and Curtin Vernacular for more detail, objectives and requirements.



A stand of pines to the north of the new Road 1 alignment

# 2.6.3 **RESEARCH & COLLABORATION**

Greater Curtin Stage One will bring the University's work into the public realm and demonstrate tangible commitments to innovation - from cutting edge research, industry partnerships, ideas generation, experimentation and commercialisation, through to redefining the campus lifestyle, in a modern, relevant, technologically smart and connected urban setting. Integrating research and collaboration into the precinct will allow people to experience innovation in a demonstrable, visible manner.

#### 2.6.4 ONGOING DEVELOPMENT

The roads and major infrastructure of Greater Curtin Stage One will be complete prior to the development of lots.

Future stages of Greater Curtin include the development of new and existing infrastructure, public realm and built form surrounding Stage One. The below diagram shows indicative staging of these future developments, with the timeline and scope at Curtin's discretion.

#### 2.6.5 SIGNIFICANT TREES

The Greater Curtin area has a dual botanic heritage, layering the remnant vegetation of the former Swan Coastal Plain with its later history as a pine plantation.

There are a number of significant pine stands within the Stage One precinct, as shown on the below diagram. More detail on the impact of these trees on the development of Lots Fo4 and F11 is outlined in Chapter 4.

The stand of trees to the south of Lot Fo4 is integrated into Pine Plaza, the major entry point between Main Street and the bus interchange. There are also a significant stands of pines around the edges of the Stage One precinct which provide excellent outlook as well as giving the precinct its 'distinctly Curtin' character.

> Prior to Stage One lots Future development Significant trees



FIGURE 7/ Ongoing development and significant trees

# 3.0 PRECINCT GUIDELINES
# **ABOUT THIS SECTION**

Chapters 3 and 4 outline all the necessary Objectives and Development Criteria that Developers will need to address to achieve the vision set out in Chapters 1 and 2.

This section, Chapter 3, covers precinct-level guidelines, which are applicable to all Places and Development Lots. Each guideline consists of an Objective and a number of Development Criteria.

#### **OBJECTIVE**

Describes the main goal which must be achieved. It is mandatory to meet the Objective.

#### **DEVELOPMENT CRITERIA**

Performance standards identify design criteria which will satisfy the specific Objective. Compliance with all of the criteria will, through whatever method, achieve the Objective. However, individual criteria are not mandatory and alternative solutions for complying with the Objective may be considered.

Some criteria are applicable only to built form, and are noted as such.

# DEFINITIONS

#### PLACE

A Place is one of the five lots shown in Figure 4, 2.3 Stage One Overview, to be developed as a public space. It is envisaged that these lots (excluding the Outdoor Common Room) will be delivered by Curtin, or as a partnership with a Developer.

#### **DEVELOPMENT LOT**

A Development Lot is one of the eight lots shown in Figure 4, 2.3 Stage One Overview, to be developed as built form. It is envisioned that these lots will be delivered by Developers.

#### **BUILT FORM**

Built form refers to any permanent or temporary building. This could be on a Development Lot, or in a Place (for example, a kiosk building).

# FLEXIBILITY

These Development Guidelines have been developed to align with the aspirations outlined within the overall Greater Curtin Masterplan documents, whilst providing a degree of flexibility for Developers to identify opportunities to deliver a variety of solutions. There is an expectation that the final outcomes represent a standard of excellence that exceeds current 'business-as-usual' practices by providing national best practice solutions for built form and places for people.

Flexibility for the Developer is offered where the Developer has demonstrated that the alternative solution is consistent with the Greater Curtin Stage One vision and meets the Development Guideline Objective and the intent of the Development Criteria.



PG1



The Precinct Guidelines are grouped in four themes. The focus for each theme is summarised in the opposite diagram, with the relevant Precinct Guidelines listed underneath. Each Precinct Guideline is outlined in the following pages.



#### FOCUS

Establishes a framework that defines the identity of both Place and built form to create a vibrant and urban experience.

#### **PRECINCT GUIDELINES**

- 3.1.1 An Urban Experience
- 3.1.2 Vibrant Social Scene
- 3.1.3 Access and Connections
- 3.1.4 Viewlines
- 3.1.5 Cohesive Diversity
- 3.1.6 Courtyards & Open Spaces within Lots



PG2

# URBAN CHARACTER

#### FOCUS

Provides direction to achieve a multidimensional urban character.

#### **PRECINCT GUIDELINES**

- 3.2.1 Articulation
- 3.2.2 Living Stream & Dolphin Dreaming Trail Interpretation
- 3.2.3 Landscape & Biodiversity
- 3.2.4 Materials & Curtin Vernacular
- 3.2.5 Public Art
- 3.2.6 Collaborate, Experiment & Innovate
- 3.2.7 Partnerships
- 3.2.8 Roofs







# **RELATIONSHIPS**

#### FOCUS

Establishes guidance to deliver a Greater Curtin that is safe, activated, and legible with good amenity.

#### **PRECINCT GUIDELINES**

- 3.3.1 Safet
- 3.3.2 Active Groundplane
- 3.3.3 Active Facade
- 3.3.4 Shade, Shelter & Comfort
- 3.3.5 Signage & Wayfinding
- 3.3.6 Place Activation Infrastructure
- 3.3.7 Vehicle Access
- 3.3.8 Plant, Waste & Deliveries
- 3.3.9 Acoustic
- 3.3.10 Storage

PG4

# RESPONSIVENESS

#### FOCUS

Establishes initiatives to encourage and achieve sustainable and innovative development outcomes.

#### **PRECINCT GUIDELINES**

- 3.4.1 Green Star Communities
- 3.4.2 Green Star Design & As-Built
- 3.4.3 Resource Efficiency
- 3.4.4 Active Living
- 3.4.5 Adaptability, Resilience & Diversity
- 3.4.6 Car Parking
- 3.4.7 Bicycle Parking & End-of-Trip Facilities

# 3.1 IDENTITY & STRUCTURE

## 3.1.1 AN URBAN EXPERIENCE

#### **OBJECTIVE**

To provide everything a city offers in a distinctly Curtin setting, which is comfortable, safe and inviting, and where buildings, spaces and urban interventions inspire and delight.

#### **DEVELOPMENT CRITERIA**

- Places and Development Lots shall provide a diverse mix of uses and activities to attract a wide variety of people.
- The design of Places and built form shall create a comfortable, safe and inviting atmosphere.
- All development shall be of outstanding design quality, creating distinct, meaningful places and buildings which promote the Greater Curtin vision, celebrate the Curtin campus context, and connect Stage One with the Academic Neighbourhood.

- Ensure a high variability to tenancies along Main Street by limiting individual shop frontage to no greater than 12m.
- Developers shall not provide a service or land use that competes directly with the Curtin Stadium (eg. a gym). Complementary services and land uses (eg. a lap pool) are strongly encouraged.







# 3.1.2 VIBRANT SOCIAL SCENE

#### **OBJECTIVE**

To create a precinct with an active social life, bringing together visitors, students, workers, their families and friends, in a strong community bond.

#### **DEVELOPMENT CRITERIA**

- The location of activity generators and the design of Places and built form shall encourage different user groups to cross paths, share experiences, and interact with each other and their environment.
- Activity generators and programmed activities shall encourage use of the precinct across the day and night, at all times of the year, and in all types of weather.
- Where required, Developers shall liaise with Curtin to incorporate curated retail tenancies. Curtin will be responsible for defining and managing the curated retail outcomes and tenancies. Curtin will provide developers with a retail brief during the RFDP stage.
- Retail and food & beverage uses, including temporary, shall provide for a diverse range of people by providing tenancies of various sizes, price points and opening times.

# 3.1.3 ACCESS & CONNECTIONS

#### OBJECTIVE

To facilitate movement patterns across the precinct which link activity generators, Places and attractions and stimulate economic and social exchange.

#### **DEVELOPMENT CRITERIA**

- The design of Places and built form shall address, define, frame and strengthen the movement paths outlined in Figure 9.
- Ground-level pedestrian access-ways shall be created through Development Lots when a frontage is more than 50 m long. Access-ways shall be publicly accessible and legible as thoroughfares; for example laneways, arcades, or undercrofts into interior open spaces.
- Pedestrian access-ways shall be integrated with existing and future movement networks, including walking, cycling, bus and future light rail.



# 3.1.4 VIEWLINES

#### **OBJECTIVE**

- To create legible viewlines through the precinct and across Development Lots.
- To frame the public realm in diverse, dynamic and playful ways, which encourage interaction between people and place.

#### **DEVELOPMENT CRITERIA**

- The design of Places and built form shall define, frame and strengthen the significant viewlines shown in Figure 10 on the following page. Where a viewline is 'misaligned' the design shall accentuate its continuation.
- The design of Places and built form shall create visual connections from the street into internal open spaces, roof terraces and other zones of activity.

#### **ADDITIONAL BUILT FORM CRITERIA**

- Built form design shall express vertical and connecting elements such as stairs, bridges and walkways between towers, where appropriate.
- Residential built form design shall incorporate a variety of expressions of balcony elements, for example cantilevering, inset, enclosed wintergardens and so on.

# 3.1.5 COHESIVE DIVERSITY

#### **OBJECTIVE**

To emulate the Curtin campus vernacular by creating a precinct of distinct, varied buildings, tied together by a cohesive landscape base, which links back to the Curtin Academic Neighbourhood.

#### **DEVELOPMENT CRITERIA**

• Places, open space and pedestrian access-ways shall use a design language which emphasises the continuity and cohesiveness of the Curtin public realm.

- Where a Developer is delivering multiple lots, a different architecture firm shall design each lot. If a Developer is delivering more than three lots, a *minimum* of three architecture firms are required.
- Buildings shall be designed with a diversity of massing geometries, orientations and heights.
- Lots greater than 2,500 m<sup>2</sup> shall be developed as multiple distinct buildings (which may be linked at lower or upper levels).
- In general, buildings fronting on to the bus interchange shall be oriented with the long side away from the interchange.



Built form frames the public realm and strengthens viewlines



Diverse geometry reduces the visual bulk of a development



Indicative overview of Stage One development, showing diversity in massing

# 3.1.6 COURTYARDS & OPEN SPACES WITHIN LOTS

#### **OBJECTIVE**

To create a diverse range of functional open spaces within Development Lots, complementary to adjacent Places, suitable for a range of active and passive uses by residents, workers and visitors at different times of the day and year.

- Built form shall define a range of different open spaces, which have various orientations, levels, microclimates, shelter, privacy, aspect, and passive/active uses.
- Open spaces shall be located adjacent to communal areas. Consider connecting some open spaces via undercrofts or communal areas.
- Large open spaces shall be divided into a range of smaller areas of varying privacy to remain functional, or be appropriately programmed with active uses. A space larger than 800 m<sup>2</sup> is generally considered a large open space, though this criterion may apply to smaller spaces.



A smaller, usable area within a larger open space



# 3.2 URBAN CHARACTER

# 3.2.1 ARTICULATION

#### **OBJECTIVE**

To provide a human-scale, meaningful interface between the public realm and built form.

#### **DEVELOPMENT CRITERIA**

- The design of built form facades and Places, shall incorporate human-scale articulation that is responsive to orientation, use and context.
- Articulation shall be purposeful and responsive to internal and external uses and to an overall design concept, so as to not appear superficial.
- Landmark corners shall be emphasised as part of the design response.

#### ADDITIONAL BUILT FORM CRITERIA

 Innovative design responses shall be employed to avoid the appearance of a uniform wall of buildings. Consider responses such as stepping, skewing or twisting facades.

# 3.2.2 LIVING STREAM AND DOLPHIN DREAMING TRAIL INTERPRETATION

#### **OBJECTIVES**

- To deliver an innovative, tangible link between the Indigenous Dreaming Trails across the precinct, the Living Stream, and water management within all development.
- To contribute to the Greater Curtin Living Stream corridor as a place of water play and biophilic design, which connects people and nature, reflects a love of living and living systems, and creates healthy and productive habitats for a contemporary community.
- To recognise and respect the importance of water to the Indigenous community.

#### **DEVELOPMENT CRITERIA**

• Developers and design teams shall familiarise themselves with the background and intent outlined in the *Greater Curtin Masterplan Document Part B*, specifically the Dolphin Dreaming Trail on pages 30-33 and the Living Stream on pages 150-151.



Expressed stair and bridge elements





Built form overhangs the public realm



Articulation is part of a larger design concept and is responsive to use and contextual features

- · Key Places and Development Lots nominated in Figure 11 shall provide an innovative design interpretation of the Living Stream and Dolphin Dreaming Trail in multiple expressions, including but not limited to built form, edible gardens, art and paving design. Design teams for these lots shall demonstrate a deep understanding of the themes as a core of their design concept. Teams shall demonstrate engagement with appropriate Indigenous, biodiversity and public art groups.
- Key Places and Development Lots nominated in Figure . 11 shall provide an innovative water feature element as part of the public realm landscape design. Teams shall demonstrate engagement with appropriate Indigenous, biodiversity and public art groups.
- All design responses shall recognise and respect the • importance of water to the Indigenous community through the provision of integrated greenscapes utilising native planting. Refer to 3.2.3 Landscape and Biodiversity for specific native planting requirements.



Water feature and paving pattern



Indicative Living Stream interpretation as part of Place o5



# 3.2.3 LANDSCAPE AND BIODIVERSITY

#### **OBJECTIVE**

To improve the overall biodiversity of the network of corridors across and beyond Greater Curtin, foster education and interpretation of natural systems, and increase comfort and amenity.

#### **DEVELOPMENT CRITERIA**

- A minimum of 70% of landscape species shall be native species, with at least 60% of trees and 50% of other planting made up of either species found within the Curtin area or other native species suitable for foraging by Carnaby's Black Cockatoo. Refer to Appendix 3 for approved planting list.
- Where applicable, Places and Development Lots shall retain and celebrate significant existing trees within lots. Refer to 4.0 Lot Guidelines for details.

- A minimum of 30% of the total Development Lot area, in plan view, shall comprise of green landscape. These areas may be at ground, podium or rooftop level. Refer to 2.3.8 Roofs for further detail.
- A minimum of 5% of the total Development Lot area shall be provided as deep planting zones. These areas may be at ground, podium or rooftop level.
- Landscape spaces shall be located to encourage a • biodiversity corridor through lots with consideration also given to landscape space within neighbouring lots.
- · Developers are encouraged to provide opportunities for educating and informing people of the unique qualities of the Curtin landscape and the importance of biodiversity. Collaboration with research groups is also encouraged.
- Rooftop vegetable patches, chicken coops and beehives are encouraged.



Green roof used as an edible communal garden



Corymbia ficifolia provides food for Carnaby's Black Cockatoo



create a connected biodiversity corridor



# 3.2.4 MATERIALS AND **CURTIN VERNACULAR**

#### **OBJECTIVE**

To create a 'distinctly Curtin' urban character through the use of high quality, innovative, meaningful and sustainable materials.

#### **DEVELOPMENT CRITERIA**

- Materials and detailing shall be of a high quality, durable, and contextually and climatically appropriate.
- Material palettes shall be a limited selection which is meaningful and responsive to the design's location within the campus, use and design concept. Innovative and non-conventional use of materials and detailing is strongly encouraged.
- · Material palettes shall reference and reinterpret the vernacular of the Curtin campus, creating a relationship between the Academic Neighbourhood and the new urban centre of Stage One. Refer to Greater Curtin Masterplan Document Part C, Appendix A: Curtin's Existing Character on pages 138-145 for further detail on the existing architectural and place language of the campus.
- All outdoor lighting shall comply with AS 4282:1997. 95% of all external public lighting luminaries within the precinct shall have an Upward Light Output Ratio less than 5%, except security lighting.



In-situ concrete is a prominent building material of the Curtin campus



Innovative use of conventional material

## 3.2.5 **PUBLIC ART**

#### **OBJECTIVE**

To provide public art which provokes discussion and delight, and enhances the distinct sense of place and identity of the precinct.

- Developers shall provide 0.75% of the total construction budget, capped at \$250,000, for public art. This may be combined with the provision in 3.2.6 Collaborate, Experiment & Innovation, for a total of 1.5% capped at \$500,000.
- Public art shall be publicly accessible and/or visible, either within or outside the lot boundary. Developers shall liaise with the designers of adjacent Places and with Curtin to determine the best location.
- Developers delivering two adjacent lots may pool the art budgets to provide a single exemplary work, at the discretion of Curtin. Developers delivering more than two lots shall not pool the budgets further.

- Selection of artists and art proposals shall form a part of the development proposal and shall be assessed and approved by Curtin as per 5.1 Approval Process.
- Public art shall be of outstanding quality and reflective of the precinct's objectives and themes.
- Public art shall be responsive to and an integral part of the architectural and public realm proposal, without necessarily implying physical integration. Innovative and non-conventional approaches to the relationship between built form and art are strongly encouraged.
- Collaboration with Curtin students or researchers, and integration of public art with Living Stream and Dolphin Dreaming Trail proposals will be highly regarded.



Public art responds to architecture



Public art references Living Stream



Playful, tactile public art encourages social interaction and activity



# 3.2.6 COLLABORATE, **EXPERIMENT & INNOVATE**

#### **OBJECTIVE**

To integrate research and collaboration outcomes into the precinct, and allow people to experience innovation in a demonstrable, visible manner.

#### **DEVELOPMENT CRITERIA**

- Developers shall provide 0.75% of the total construction budget, capped at \$250,000, for the provision of elements which showcase innovation and collaboration with Curtin academic and research projects in a demonstrable, visible manner. This may be combined with the provision in 3.2.5 Public Art, for a total of 1.5% capped at \$500,000.
- · Where incorporated, collaborative, incubator and 'make-it' spaces shall be prominently located and visually accessible.

# 3.2.7 PARTNERSHIPS

#### OBJECTIVE

To create a bold, entrepreneurial atmosphere that breaks down the traditional boundaries and maximises the opportunity for alignment between commercial development and research.

#### **DEVELOPMENT CRITERIA**

- Developers are encouraged to explore opportunities for partnerships, collaboration and the exchange of knowledge with Curtin's academic and research projects.
- Developers are encouraged to seek partnership opportunities with product manufactures and others in the supply chain to bring research and innovation to Greater Curtin Stage One.
- Developers are encouraged to partner with industry, government and the broader community.



Showcasing innovative technology



providing amenity (3d-printing service)

## 3.2.8 **ROOFS**

#### **OBJECTIVE**

To ensure roofs make a positive contribution to the amenity, attractiveness and sustainability of the precinct.

- Roofs shall be an integral part of the built form design response, considered as a 'fifth facade' in terms of appearance from above and in profile.
- All roof areas over 100m<sup>2</sup> shall be 'green' (ie planted).
- Habitable, functional rooftop areas shall be provided wherever practicable.
- Building services, plant and sustainability elements shall be integrated into the roof design, considering views of the rooftop from the public realm, adjacent buildings and aerial photography.
- Roofs shall contribute to a reduction in heat island effect, by demonstrating that at least 75% of the total Development Lot area, in plan view, comprises building or landscaping elements that reduce the impact of heat island effect. Provide demonstrated equivalence of Green Star Submission Template 31 Heat Island Effect.





Rooftop designed to be seen from above



Non-habitable green rooftop



# 3.3 **RELATIONSHIPS**

# 3.3.1 **SAFETY**

#### **OBJECTIVE**

To contribute to a safe environment that employs appropriate design strategies to minimise reliance on CCTV and other security measures, and optimises opportunities for the passive surveillance of Places, streets and the public realm.

#### **DEVELOPMENT CRITERIA**

- Developments shall comply with Curtin University Security Design Standards.
- Developments shall provide adequate and attractive lighting, including creation of 'safe pathways' across the precinct.
- Places and open spaces within Development Lots shall be designed with 'clutter reduction' in mind to minimise risk or hazards and increase legibility.
- Developers shall undertake and report on Crime Prevention through Environmental Design (CPTED) and Safety in Design principles throughout the design process. Reports shall be submitted at key reporting milestones as identified in 5.1 Approval Process.

- Built form shall tightly hold the street and street corners to reduce vehicular visibility and encourage slower traffic movement.
- Buildings shall provide separation and secure access controls between public, private and privileged areas.
- Developers shall be responsible for all CCTV and security monitoring within lots, and where required shall interface with Curtin networks for seamless coverage of the public realm. Refer to 4.0 Lot Guidelines for special conditions for Place 01, Lots F03 and F04.
- All developers shall provide a Security Plan for Curtin's approval. Refer to 5.4 Integrating with Curtin Infrastructure for more information.



Lighting and furniture 'clutter reduction' in the public realm



# Example of Primary/Secondary Frontage – Alfresco dining areas create an active street edge



Example of Secondary Frontage – areas which may not be publicly accessible provide visual activity to the street

# 3.3.2 ACTIVE GROUNDPLANE

Note: Refer to 3.3.3 Active Facades and 3.3.4 Shade, Shelter and Comfort for related objectives and criteria.

#### **OBJECTIVE**

To create Places for people with focused points of activity, by creating a hierarchy of built form edges at groundplane level.

#### **BUILT FORM CRITERIA**

• Provide Primary, Secondary and Tertiary frontages to developments, in accordance with Figure 12 and the following principles:

1. Primary – building edges which address Main Street or include retail land use.

2. Secondary – building edges which address the Bus Interchange, Road 1 and other major pedestrian routes.

3. Tertiary – building edges fronting on to access and service roads, and minor pedestrian routes. This category also includes the multi-storey carpark proposed for Lot Ao5.

• Comply with the Development Criteria for individual frontages, as outlined on the following page.







#### Indicative section through Primary Frontage



Indicative section through Secondary Frontage



#### **PRIMARY FRONTAGES**

- Permitted ground level land uses are retail, food & beverage, small commercial tenancies and incubator space, and foyers for residential, commercial or academic buildings.
- The ground level shall be publicly accessible, with multiple well-defined entrances at grade.
- A colonnade shall be integrated into the built form, to provide protected outdoor spaces for alfresco dining, hang-out and so on, and to define a consistent edge to Main Street.
- Adjacent outdoor spaces shall provide seating, canopies and other infrastructure.
- Services cupboards, access panels and emergency doors shall be located away from Primary Frontages wherever possible, and otherwise integrated into the overall built form design.

#### **SECONDARY FRONTAGES**

- Permitted ground level land uses are as per Primary frontages, plus communal residential or student accommodation spaces, larger commercial tenancies, and active private spaces such as function rooms or academic/teaching spaces.
- The ground level shall have visible activity that may or may not be publicly accessible. Consider methods of screening that balance privacy and visibility.
- Secondary frontage shall allow for potential future conversion to Primary Frontage, eg. retail, food & beverage.
- Services cupboards, access panels and emergency doors shall be integrated into the overall built form design.

#### **TERTIARY FRONTAGES**

- Ground level car parks and service areas are permitted only on Tertiary Frontages.
- Car parks and services shall be appropriately screened, to provide an attractive interface to the street. These could include green walls, supergraphics, integrated public art proposals and so on.
- Natural ventilation of car parks is preferred wherever possible.

## 3.3.3 ACTIVE FACADES

#### **OBJECTIVE**

To maximise the opportunity for passive surveillance and activation of Places and the public realm, by using the design of built form above ground level.

- Balconies, terraces and communal areas shall be aligned with Primary and Secondary frontages as per Figure 12 to ensure passive surveillance of Places and the public realm.
- Balconies shall be provided to a minimum of 75% of all residential units, including student accommodation.
- Facade screening shall use innovative methods to balance privacy with activation. Operable facades are strongly encouraged.
- Podium-level carparks are permitted only on Tertiary Frontages. On Primary and Secondary Frontages, podium-level carparks shall be 'sleeved' by active uses.
- Carparks on Tertiary Frontages shall be visually screened to provide an active, engaging interface to the public realm. Natural ventilation of carparks is preferred wherever possible.
- Clothes drying areas (private or communal) shall not be visible from the public realm.



Example of Primary Frontage –



Example of Tertiary Frontage – podium carpark screened with interactive, engaging facade



Indicative section through Main Street Primary Frontage demonstrating a range of active facade design responses





# 3.3.4 SHADE, SHELTER & COMFORT

#### **OBJECTIVE**

To provide an environment that protects users from the elements and encourages outdoor activity.

#### **DEVELOPMENT CRITERIA**

- Large courtyards and open spaces shall provide shelter from free-standing canopies to a minimum of 20% of the open area, additional to shelter offered by buildings.
- Provide deep planting zones for shade trees.

#### **ADDITIONAL BUILT FORM CRITERIA**

- Primary Frontages (ref. Figure 12) shall utilise colonnades and/or building overhangs to a minimum depth of 4 m along the full length of frontage.
- Secondary Frontages shall utilise colonnades, building overhangs and/or integrated awnings to a minimum depth of 2 m along the full length of frontage.
- Awnings, canopies and cantilevering built form may overhang the lot boundary, provided they do not

interfere with landscape, infrastructure or vehicle movements.

- Built form shall minimise overshadowing of Places and attractions (refer 2.5 Places). Provide solar access analysis and shading diagrams as part of design approvals process.
- Open spaces, courtyards and roof terraces within lots shall be of a variety of orientations and locations to ensure access to a sunlit outdoor area at different times of the day and year.
- Built form shall minimise the adverse impact of wind on the public realm. Provide desktop wind analysis as part of the design approvals process, which demonstrates that wind conditions on Primary Frontages and in major public spaces are "acceptable for stationary long-term activities", and for the remainder of the public realm are "acceptable for walking".





Indicative sections through Primary and Secondary Frontages demonstrating a range of shade and shelter design responses

# 3.3.5 SIGNAGE & WAYFINDING

#### **OBJECTIVE**

To provide clear and concise signage and wayfinding elements across the precinct that are universally identifiable and in keeping with the Curtin campus wayfinding requirements.

#### **DEVELOPMENT CRITERIA**

- Developments shall conform to the provisions of the Curtin Wayfinding Strategy. The Developer shall liaise with Curtin to identify extent, requirements and style guides for the incorporation of signage and wayfinding elements, including for tenancies, buildings and the public realm.
- The design of Places and built form shall contribute to effective wayfinding by defining clear viewlines, shorelines and boundaries to the precinct.
- Signage design shall consider the clarity and legibility of signage to both pedestrian and vehicle traffic.
- Third-party services (eg ATMS) shall be located and signed with consideration to ease of wayfinding, and designed with consideration of use at night and in wet weather

#### ADDITIONAL BUILT FORM CRITERIA

- Residential, commercial, retail and amenity areas within the same Development Lot shall have separate entries and shall each have a distinct 'address' onto one street.
- Building and tenancy signage shall be an integral part of architectural design responses, to avoid cluttering the public realm.
- Signage for commercial and retail facilities shall be in keeping with overall precinct and campus values minimising impact on the visual landscape, and subject to Curtin's approval.

# 3.3.6 PLACE ACTIVATION INFRASTRUCTURE

#### OBJECTIVE

To provide the necessary infrastructure to enable public passive and active use and sociability of key places and facilitate organised activities and events adjacent to or within lots.

#### **DEVELOPMENT CRITERIA**

- The Developer shall liaise with Curtin during the design phase to ensure that future programmed activities and events can be accommodated efficiently and safely, be accessible to all users and be considerate of maintenance requirements.
- The Developer shall support the design of Places and large open spaces within lots with a Place Activation Plan that demonstrates:
  - Who will use the space, active and passive uses and programs
  - How the design of the space supports its intended function
  - Provision and location of physical infrastructure to support the place experience, for example:
  - Seating, shade/shelter, lighting and feature lighting, public art, rubbish bins, drinking fountains and other public amenities to suit intergenerational needs
  - Power, equipment storage space, moveable furniture and other fixtures and equipment, and other activation infrastructure requirements
  - Integrated technology eg. charging stations for mobile devices.



Large open space programmed with a variety of active uses



Building entry clearly defined



# 3.3.7 VEHICLE ACCESS

#### **OBJECTIVE**

To prioritise pedestrian and cycle access by ensuring vehicle access does not intrude upon Places and the public realm.

- Vehicle access shall be off Tertiary Frontages only (ref. Figure 12). Indicative vehicle access points to built form are shown in Figure 13.
- The number of vehicle crossovers shall be minimised by consolidating access within and between adjacent lots as much as possible.
- The width of vehicle crossovers shall be minimised.
- The placement, levels and finish of vehicle crossovers shall be consistent with the design of the public realm.
- Entries to carparks and loading bays shall be clearly signed in advance to provide clear wayfinding for visitors to the precinct, especially around the bus interchange.
- Entries to carparks shall be such that they do not create deep building rebates that may encourage antisocial behaviour.
- Developers shall provide a Vehicle Access Management Plan as part of the design approvals process.
- Access for service and delivery vehicles may be during restricted hours only. Developers shall liaise with Curtin and include detail within Vehicle Access Management Plan.



# 3.3.8 PLANT, WASTE AND DELIVERIES

Development at Curtin University is a unique situation. Curtin guarantees security of supply of services and utilities, and provides opportunities for innovative collaboration and research partnerships. For further information about working with Curtin to connect to infrastructure and services, and to provide for waste collection and deliveries, refer to 5.4 Integrating with Curtin Infrastructure.

#### **OBJECTIVE**

To minimise the impact of plant, waste and services on Places and the public realm.

#### **DEVELOPMENT CRITERIA**

- Loading areas, plant and storage shall be visually integrated within built form or streetscape, and screened to minimise visual, noise and odour intrusions.
- Services and plant equipment shall not be visible from the public realm, street, or above the roofline of buildings. 'Feature' sustainability initiatives may be considered if proven to enhance the public realm.
- Driveway access is only permitted on Tertiary facades.

- Access to loading, plant and waste storage is permitted from Tertiary Frontages only (ref. Figure 12).
- Services and plant equipment shall not be located on balconies.
- A waste professional specialist shall prepare and implement an Operational Waste Management Plan (OWMP) for each development in accordance with best practice approaches. The OWMP shall cover recycling, restricted access hours for service vehicles, and ensure that bins shall not be collected from the street verge.
- Fire exits shall be integrated into facade designs minimising deep rebates that may encourage antisocial behaviour.



Deep rebates for vehicle and service access are not permitted.





# 3.3.9 ACOUSTICS

#### OBJECTIVE

To ensure new development provides acoustic protection to users of buildings, Places and the public realm, and to minimise the acoustic impact of new development on neighbouring users.

#### **DEVELOPMENT CRITERIA**

· Place Activation Plans shall address the impact of noise from activities on neighbouring buildings.

#### **ADDITIONAL BUILT FORM CRITERIA**

- Noise and vibration intrusion and emission shall be minimised, in balance with achieving the objectives of a mixed-use precinct, and consistent with urban acoustic standards, not suburban.
- Quality acoustic protection shall be provided for residential, student accommodation and commercial developments. Developers shall provide acoustic analysis as part of the design approvals process which demonstrates achievement of acceptable internal noise levels by best practice. Innovative design responses, potentially including 'quiet house' design responses, may be required to achieve internal noise levels for dwellings adjacent to the bus interchange.
- Balconies enclosed with operable glass louvres are encouraged where apartments overlook the bus interchange, to provide acoustic and visual screening.

# 3.3.10 **STORAGE**

#### OBJECTIVE

To ensure residential developments are provided with secure and convenient storage.

- · Apartments with one bedroom (excluding studio apartments and student accommodation) shall be provided with an enclosed, lockable storage area, accessible from outside the dwelling, with a minimum dimension of 1.4m and an internal area of at least 2.5m<sup>2</sup>. Note that external storage areas for studio apartments or student accommodation may be provided at the developer's discretion.
- Apartments with two or more bedrooms (excluding student accommodation) shall be provided with an enclosed, lockable storage area, accessible from outside the dwelling, with a minimum dimension of 1.5m and an internal area of at least 4m<sup>2</sup>.
- Space for bicycle storage for apartments may be incorporated into the external storage areas described above, but shall be additional to the area requirements.



Encloseable 'wintergarden' balcony

# 3.4 RESPONSIVENESS

# 3.4.1 GREEN STAR COMMUNITIES

Curtin University was awarded 'Australian Excellence' (5-Star) Green Star Communities rating by the Green Building Council of Australia (GBCA) in 2015. The university is committed to on-going recertification.

#### **OBJECTIVE**

To contribute to and uphold the principles of Greater Curtin's certification as an 'Australian Excellence' Green Star Community.

#### **DEVELOPMENT CRITERIA**

- · Design proposals shall demonstrate understanding of Green Star Communities as more than simply meeting Environmentally Sustainable Design targets. Proposals shall demonstrate creative thinking in addressing the key elements of enabled economy, connected community, and living environment.
- · Through integrated analysis and consultation with Curtin, developers shall ensure that all new development upholds and contributes to Greater Curtin's certification as an 'Australian Excellence' Green Star Community.

# 3.4.2 GREEN STAR DESIGN & AS-BUILT

#### **OBJECTIVE**

To complement Greater Curtin's 'Australian Excellence' Green Star Communities rating by achieving the same standard of 'Australian Excellence' in the built form.

#### **BUILT FORM CRITERIA**

• Developments shall demonstrate 'Australian Excellence' Green Star Design & As-Built equivalency, as defined by GBCA at the time of submission. Full evidence to support the equivalency should be provided to Curtin as per the Green Star Design & As-Built Submission Guidelines, at both design and as-built stages. Alternatively, the Developer may seek third-party certification.





Creatively addressing sustainability strategies



# 3.4.3 RESOURCE EFFICIENCY

#### **OBJECTIVE**

To deliver a precinct and buildings that reduce materials and water demand, eliminate or minimise dependence on energy use, and generate outcomes that increase efficiency and contribute positively to the environment.

#### **BUILT FORM CRITERIA**

- Developers are strongly encouraged to identify and engage opportunities that utilise centralised services facilities across the precinct. Where mutual benefit can be demonstrated, such as the provision of services additional to precinct requirements, Curtin may assist in the facilitation of associated built works at their discretion.
- Developers shall showcase innovation, collaboration and research in resource efficiency in a demonstrable, visible manner. This may be combined with the provision in 3.2.6 Collaborate, Experiment, Innovate.

#### ENERGY

 Achieve reduction in peak energy demand, targeting 30% improvement on NCC requirements. Provide design evidence of Energy Modelling Report and operation evidence of Commissioning Report.

#### WATER

- Achieve reduction in potable water consumption, targeting 10 points on the Green Star Water Calculator. Provide design evidence of Water Calculator and operation evidence of Commissioning Report.
- Ensure the post-development stormwater peak event discharge does not exceed the pre-development peak event discharge.
- Achieve a reduction in pollutants entering the public sewer infrastructure, as per GBCA Table 26.2.

#### ENVIRONMENTAL MANAGEMENT

- All contractors shall have a valid ISO 14001 Environmental Management System accreditation prior to and throughout construction.
- Developers shall familiarise themselves with Curtin University's Environmental Risk Management Plan and develop and implement a Comprehensive Environmental Management plans for all construction works.

#### **CONSTRUCTION WASTE**

• Achieve a reduction in construction waste, targeting recycling or reuse of 90% of the construction waste.





Building services should generally not be visible. 'Feature' sustainability elements may be considered.

# 3.4.4 ACTIVE LIVING

#### **OBJECTIVE**

To promote and support healthy and active living through the design of Places and built form.

#### **DEVELOPMENT CRITERIA**

- All development shall employ design strategies to encourage regular use of the outdoor environment in different weather conditions, including provision of appropriate furniture, weather protection, lighting, services and activities.
- The design of Places and the public realm shall ensure provision of safe, sheltered, comfortable and interconnected paths for walking, cycling and other active transport.
- Developments shall conform to the university's integrated Transport and Movement Plan.

- Buildings shall encourage the use of stairs instead of lifts, through convenient positioning, visual connection between levels and stand-out design.
- Bicycle storage and end-of-trip facilities shall be designed as attractive places visible from the public realm. Ensure end-of-trip facilities are sufficient for and welcoming to people who may walk or run to work, or exercise during breaks, as well as cyclists.
- Natural cross-ventilation of habitable spaces is encouraged wherever possible. Mixed-mode ventilation using 100% outside air is an acceptable alternative.
- Developers shall consider indoor air quality of all buildings and respond appropriately. This is of particular note in developments adjacent to the bus interchange.





display element promotes active living

Look mvm hands! 49

Excellent amenity for cyclists



# 3.4.5 ADAPTABILITY, RESILIENCE

& DIVERSITY

#### **OBJECTIVE**

To create a place which caters for all people, and is resilient to future change in society, economics and climate.

#### **DEVELOPMENT CRITERIA**

- All development shall demonstrate 'above and beyond' approaches to the NCC and Australian Standards for accessibility.
- All development shall comply with the Curtin Climate Adaptation Plan and the Emergency Management Plan.

- Residential developments, including student accommodation shall provide a minimum of 1% accessible apartments, evenly distributed across the variety of residential product offered.
- Residential developments shall be designed with consideration to changing internal configurations to accommodate future changes in living and family structures.
- Residential and commercial space at ground level shall be designed to allow for potential conversion to small retail uses, considering ceiling height, floor levels and zones for services.



### 3.4.6 CAR PARKING

#### **OBJECTIVE**

To provide secure and clearly defined car parking for residents, workers and visitors, while reducing reliance on carbon-intensive modes of transport through innovative strategies.

- Developers shall manage all private residential parking. Curtin University shall manage all non-residential parking, including visitor parking, which is part of a campus-wide allocation determined by the State Government. Developers shall provide adequate separation between residential and non-residential parking areas.
- Developers shall provide car parking bays in accordance with the following table:

Student Accomm.	Maximum 1 private bay per 10 beds Minimum 1 car-share bay per 100 beds
Residential Apartments	Maximum 1.2 bays per apartment
Commercial	Maximum 1 bay per 100m² NLA
Retail	1 bay per 50m² NLA for small tenancies 1 bay per 30m² NLA for large tenancies ( > 1,000 m² NLA)
Short-Stay Apartments	Maximum o.6 bays per key
Visitor Parking	No provision. Visitors shall use general Curtin University car parking bays.
Scooter/	
Motorcycle Parking	1 bay per 10 car parking bays

- The total number of non-residential car parking bays in Stage One shall not exceed the allocation determined by Curtin University, as part of the campus-wide allocation determined by the State Government. Compliance with maximum car parking numbers stated in 4.0 Lot Guidelines shall achieve this criterion. However, car parking for multiple lots may be consolidated in one lot if desired, as the cap applies to Stage One as a whole rather than to individual lots.
- All parking areas shall be designed in accordance with AS-2890.1, to be well lit, safe and secure.
- Development Lots shall achieve demonstrated equivalence of 10 points on Greenstar 'Sustainability Impacts from Transport' credit via preparation of a Travel Plan.
- Developers shall liaise with Curtin during design to ascertain whether additional efficiencies in carparking can be utilised by Curtin.
- The implementation of innovative strategies to reduce reliance on carbon-intensive modes of transport is expected, including consideration of share-car systems (eg GoGet), electric car charging bays, carpooling schemes, shared use of parking bays between different land uses, and so on.





# 3.4.7 BICYCLE PARKING AND **END-OF-TRIP FACILITIES**

#### **OBJECTIVE**

To provide useful, secure, attractive and easily accessible bicycle parking for residents, workers and visitors, and to encourage the use of bicycles and other active forms of transport through provision of exemplary end-of-trip facilities.

#### **BUILT FORM CRITERIA**

• Developers shall provide bicycle parking and end-of-trip facilities in accordance with the following table:

Student Accomm.	Minimum 1 bicycle storage space per 4 beds, Class 1 or 2.
Residential Apartments	Minimum 1 bicycle storage space per 1 dwelling, Class 1 or 2. Bicycle storage is in addition to dwelling storage.
Commercial and Retail Staff	Minimum 1 bay for 15% of building staff (based on 1 person per 15m <sup>2</sup> NLA), Class 1 or 2. Where more than 5 bicycle bays are provided, a minimum of 1 female and 1 male accessible shower, located in separate changing rooms. Additional shower facilities to be provided at a rate of 1 male and 1 female shower for every 10 bicycle parking bays. Minimum 1 locker per 1 bicycle storage space. Minimum 1m <sup>3</sup> of drying space per 7 bicycle storage spaces, for clothing in wet weather.
Short-Stay Apartments	Minimum 0.3 bays per key, Class 1 or 2.
Visitors (All Land Uses)	1 visitor bay per 10 private bays, Class 3.
Academic Building	Provision for academic staff and students to be discussed with Curtin.

- Bicycle parking facilities shall be designed, located and constructed in accordance with AS-2890.3 Bicycle Parking Facilities.
- End-of-trip facilities shall be secure, and located as close as possible to bicycle parking facilities, in a welllit area which is capable of easy passive surveillance.
- Lockers and change rooms shall be well ventilated and of a size sufficient to allow the storage of cycle clothing and equipment.
- The provision of end-of-trip facilities and lockers shall be sufficient for use by people who may walk or run to work or during breaks, as well as cyclists.
- Visitor bicycle racks shall be located close to building entrances, highly visible and clearly signed.
- Visitor bicycle racks shall be designed and located to enable use by people making deliveries.



Bicycle storage in a Class 2 facility



**Consider sufficient lockers and facilities** for use by people other than cyclists

# 4.0 LOT SPECIFIC SUDELINES



# **ABOUT THIS SECTION**

Chapters 3 and 4 outline all the necessary Objectives and Development Criteria that Developers will need to address to achieve the vision set out in Chapters 1 and 2.

This section, Chapter 4, describes each Place and Development Lot, and the specific requirements which apply in addition to the Precinct Guidelines in Chapter 3.

# 4.1 BUILDING HEIGHTS

Expected building heights for Stage One development are outlined in this chapter, and shown indicatively in the rendered diagram on the following page.

In keeping with the Greater Curtin vision for flexible and innovative development, should a Developer propose to exceed the expected building height, Curtin shall consider each proposal on its individual merit, while retaining the right to reject any proposed additional height.

In addition to addressing each of the development objectives and criteria in this document, Developers wishing to exceed the expected building height shall demonstrate how the additional building height and mass make a positive contribution to the Stage One precinct and the Curtin campus as a whole, and that the additional height does not have an overall adverse impact on the public realm.

# 4.2 BUILDING SETBACKS

Building setbacks for each lot are outlined in this chapter, and shown indicatively in the rendered diagram on the following page. Two setbacks are defined – one for ground and podium levels, and one for upper levels. The setback for groud-podium levels is additional to any requirements for a colonnade. In keeping with the Precinct Guidelines aspirations of creating a precinct of distinct, varied buildings that frame the public realm in diverse, dynamic and playful ways, there is allowance within these Guidelines for built form to encroach into setback zones and overhang lot boundaries at landmark points.

In addition to addressing each of the development objectives and criteria in this document, Developers wishing to overhang setback zones or lot boundaries shall demonstrate how the overhang makes a positive contribution to the Stage One precinct and the Curtin campus as a whole, and does not have an overall adverse impact on the public realm.

# 4.3 INFRASTRUCTURE LIMITS

Infrastructure capacity allowances are provided for each lot for electrical, sewer, water and gas scheme services. The capacities have been calculated based on industry standard assumptions for each service and Curtin's assumed yields and asset classes for Stage One as described within these Development Guidelines.

The capacity allowances represent the maximum commitment Curtin provides for the delivery of each service to each lot, should the lot be developed within the parameters set by the Development Guidelines. The capacities do not take into consideration the sustainability design requirements expected to be employed by Developers and as such are considered to be conservative.

Increased service capacities may be available upon application to Curtin should a development proposition require (eg, increased yield or significant change of land use) however cannot be guaranteed and may attract additional fees/headworks costs. 6

## **STAGE ONE OVERVIEW**







# 4.4 PLACE 01 CURTIN SHOWCASE



#### DESCRIPTION

Area:	Approx. 5,500 m²
Main Use:	Curtin Showcase at Lots F11/F12 –
	The precinct's social heart, an indoor/ outdoor expression and exhibition of Curtin life, past, present and future, showcasing innovation and providing public amenity.
Attraction:	<b>Pine Plaza</b> – A shaded and colourful transit and meeting plaza linking the bus interchange, retail and Innovation Street with the Academic Neighbourhood

#### **DELIVERY MODEL**

Delivered and managed by Curtin. Timing and extent of development is at Curtin's discretion.

#### **PLACE REQUIREMENTS**

Curtin Showcase Interim - by Curtin

• Pop-up food and beverage, marketplace and/or entertainment space

#### Curtin Showcase Future Development – by Curtin

- Celebrate and integrate Curtin Geodesic Dome
- Indoor/outdoor ground floor experience
- Refer to Lot F11 for further detail

#### Pine Plaza – by Curtin

- Outdoor reading rooms
- Shade from pine trees and colourful canopies
- · Grouped seating and outdoor meeting spaces

#### DESIGN REQUIREMENTS FOR ADJACENT BUILT FORM

Pine Plaza - by Developer

- Active frontage
- Visually strengthen pedestrian link between Innovation Street and bus interchange

#### **SPECIAL CONDITIONS**

#### Curtin Showcase Interim - by Curtin

- Programming and management of temporary activation and infrastructure
- · Existing trees to be retained





#### PLACE REQUIREMENTS



Note: dimensions and areas are approximate



# 4.5 PLACE 02 MAIN STREET



#### DESCRIPTION

Area:	Approx. 3,500 m <sup>2</sup>
Main Use:	Main Street – The precinct's main
	entry point; a Main Street with a
	distinctly local and authentic business
	mix to meet diverse user needs.
	Shared street.
A	

Attraction: **The Green** – A programmable public space hosting food trucks, market stalls and moveable outdoor furniture.

#### **DELIVERY MODEL**

Delivered and managed by Curtin.

#### **PLACE REQUIREMENTS**

#### Main Street - by Curtin

- · Precinct entry statement
- Shared street
- Pedestrian priority
- Alfresco dining
- Banner poles
- Interactive feature lighting
- Grouped and individual seating, bike racks, drinking fountains etc.
- · Active frontages
- Short-term parking

#### The Green – by Curtin

- Food truck or cart spaces x 2
- Temporary seating such as beanbags and deck chairs
- Temporary shade such as umbrellas
- Lawn and shade trees
- Overhead feature lighting
- Temporary games

#### DESIGN REQUIREMENTS FOR ADJACENT BUILT FORM

#### Main Street - by Developer

- Ground level colonnade to provide shelter and cohesion, and create intimacy and human scale
- Transparent facades to support creative visual merchandising
- Maintain shoreline along building

#### **SPECIAL CONDITIONS**

#### Main Street – by Curtin

- Programming and management of flagship special events showcasing innovation, for example Innovation Fair, Science Week, Makers Markets
- Banner poles content and scheduling
- Provision for Future Light Rail

#### The Green – by Curtin

· Program and manage food trucks/carts

#### Main Street & The Green - by Developer with Curtin

 Manage and resource daily equipment set up and pack down; store and maintain/manage equipment.




### PLACE REQUIREMENTS

- Lot Boundary
  Easement
  Connections
  Attractions
  Open Space by Curtin
  Area of Influence on Built Form
  - Area of Influence on E -by Developer



# 4.6 PLACE 03 INNOVATION STREET



#### DESCRIPTION

Area: Main Use: Approx. 1,700 m<sup>2</sup> A lively, bespoke urban street that demonstrates innovation and connects Main Street and the bus interchange with the Academic Neighbourhood

#### **DELIVERY MODEL**

Delivered and managed by Curtin.

#### **PLACE REQUIREMENTS**

#### Innovation Street – by Curtin

- Banner poles
- Feature lighting neon and catenary
- Bespoke street furniture
- Slow moving vehicles
- Shared street
- Engagement with Building 410 courtyard

#### DESIGN REQUIREMENTS FOR ADJACENT BUILT FORM

#### Innovation Street – by Developer

- Lot Fo7 corner activation including alfresco dining
- Highly visible 'make-it' studios and demonstration spaces
- Collaborative work spaces
- Ground level colonnade or canopies to provide shelter and cohesion, and create intimacy and human scale
- Catenary lighting spanning the street

#### **SPECIAL CONDITIONS**

#### Innovation Street – by Curtin

- Banner poles content and scheduling
- Programming and management of flagship special events that showcase innovation – refer to Place o2 Main Street

#### Innovation Street - by Developer with Curtin

 Access to make-it studios and collaborative work spaces outside of academic calendar, in connection with specific programs



118.8

INNOVATION STREET



14.3

### PLACE REQUIREMENTS

- Lot Boundary
  Easement
  Connections
  Attractions
  Open Space by Curtin
  Area of Influence on Built Form
  - -by Developer

# 4.7 PLACE 04 OUTDOOR COMMON ROOM



#### DESCRIPTION

Area:	Approx. 1,600 m <sup>2</sup>
Main Use:	Outdoor Common Room – An outdoor
	common room with a health and
	wellbeing focus, supporting student
	life. A central feature in the linear
	connection between Curtin Stadium
	and northern playing fields
Attraction:	<b>The Lounge</b> – A safe, comfortable and connected waiting space in the centre of the Bus Interchange, supporting the Campus arrival/departure experience

#### **DELIVERY MODEL**

**Outdoor Common Room** – delivered and managed by Developer.

**The Lounge** – delivered and managed by Curtin/PTA as part of the Bus Interchange.

#### **PLACE REQUIREMENTS**

#### Outdoor Common Room - by Developer

- Games an arrangement of permanent and temporary informal/self organising activities, such as chess, ping-pong, Foosball etc
- Grouped and individual seating, study pods, meeting spaces, massage chairs
- Exercise and play equipment such as swings, climbing ropes, bars, slides and benches
- Flexible space for programmed activity to support student life – eg. outdoor movie nights, social club/ fund raising activities etc
- Sensory, edible, medicinal landscaped green space, including herbs, vegetables and other themed planting
- Small 'stretch' spaces for yoga, meditation etc
- · Access to 'green' and sky'

#### The Lounge – by Curtin/PTA

- · Public toilets for bus passengers and staff
- Security
- Av display
- · Grouped and individual seating
- Sit down/stand up desks
- · Programmed coffee cart
- Book share space
- Trees and landscape
- Low-key intergenerational 'play' elements

#### DESIGN REQUIREMENTS FOR ADJACENT BUILT FORM

#### Outdoor Common Room - by Developer

- Pedestrian priority accessway to achieve north/ south link between playing fields and Curtin Stadium.
   If Lots Fo3 & Fo4 are delivered separately, it is the responsibility of the first lot to deliver this accessway in an interim state that is safe and accessible.
- Indoor/outdoor interface between ground floor uses in Lots Fo3 and Fo4
- Wind management

#### **SPECIAL CONDITIONS**

#### Outdoor Common Room - by Developer with Curtin

- Provide 24 hour, year round access, with security to be coordinated with Curtin University
- Manage and resource daily equipment set up and pack down; store and maintain/manage equipment

#### The Lounge – by Curtin/PTA

- Programming and management of coffee cart and bookstore
- Programming of AV display





# GREATER CURTIN STAGE 1 DEVELOPMENT GUIDELINES **4.0** 77

#### PLACE REQUIREMENTS

Lot Boundary
 Easement
 Connections
 Attractions
 Open Space – by Curtin/PTA
 Open Space – by Developer
 Area of Influence on Built Form

-by Developer





# 4.8 PLACE 05 THE PLAY SPACE



#### DESCRIPTION

Area:	Approx. 2,100 m <sup>2</sup>
Main Use:	<b>The Play Space</b> – A semi permanent
	recreation break out space for informal
	and unstructured games, integrated
	with Curtin Stadium
Attraction:	The Living Stream – A structuring
	landscape feature celebrating
	indigenous culture, interpretation
	of the historic paleo channel and

innovative biophillic design

#### **DELIVERY MODEL**

Delivered and managed by Curtin.

#### **PLACE REQUIREMENTS**

#### The Play Space - by Curtin

- A selection of the following:
  - Sport and recreation infrastructure such as multi use half courts (basketball, volleyball etc), a tennis/ handball wall
  - Skateable furniture, including benches, seating, tables
  - Amplification (music)
  - Informal seating
  - Shade
  - Interchanging public art mural program
  - Relationship to stadium cafe
  - Integrated outdoor fitness equipment
  - Flexible open area to allow setup of marquees

#### The Living Stream – by Curtin

- Expression of natural systems geomorphology, water and plant communities
- · Interpretation of local indigenous culture and heritage
- Small meeting/stretch spaces
- Integration with campus-wide walking/running tracks
- Public art installation to reflect the central idea of water

#### **SPECIAL CONDITIONS**

The Play Space – by Curtin

• Develop a Venue Management Plan in conjunction with Curtin Stadium









Area of Influence on Built Form -by Developer



## 4.9 LOTS F01 + F02



#### DESCRIPTION

Area:	2,786 m² + 6,114 m²
Main Use:	Residential (academic)
	Residential (apartment)
	Student accommodation
Secondary uses:	Carparking

#### **BUILDING REQUIREMENTS**

#### SETBACKS:

**Boundary between Fo1 + Fo2 if delivered as separate lots:** Lot Fo1 shall provide sufficient setbacks on the internal boundary to allow for development of Lot Fo2 up to the internal boundary. Lot Fo1 shall allow for access road to both lots.

Ground level: No setbacks.

Podium levels (1-3): No setbacks.

**Upper levels:** 3m setback on north and south boundaries. Overhanging is permitted at landmark points.

#### **EXPECTED HEIGHT:**

7-8 levels

#### **EXPECTED YIELD:**

Apartments	91
Student beds	500

#### **PARKING REQUIREMENTS**

- Refer to Precinct Guidelines for required ratios for car and bicycle parking.
- The Bentley-Curtin parking cap applies to nonresidential bays. The maximum permitted nonresidential car bays for Lots Fo1 + Fo2 is o. Temporary parking/dropoff for service vehicles is permitted.
- Car parking allocations may be transferred between lots or consolidated within one lot if desired, as the cap applies to Stage One as a whole rather than to individual lots.

#### **INDICATIVE INFRASTRUCTURE CAPACITIES**

- Electrical нv capacity 1.54 мvA
- Waste water capacity 4.7 L/s/Ha (NLA)
- Scheme water capacity 5.2 L/s/Ha (NLA)
- Natural gas capacity 11,000 мJ/hr

- Lots Fo1 and Fo2 may be delivered by separate developers, or amalgamated.
- Lot Fo1 shall allow for vehicle and service access off Road 7, to both lots.
- Note that Survey Pillar 6 is located approximately 9m to the west of Lot Fo1 (shown on plan), and must not be removed.



UPPER LEVEL WITH INDICATIVE BUILT FORM  $\widetilde{\mathbf{0}}$ 

# 4.10 LOTS F03 + F04



Refer to Place 02 and Place 04 for additional criteria.

#### DESCRIPTION

Area:	6,557 m² + 8,939 m²
Main Use:	Student accommodation
Secondary uses:	Retail, food & beverage
	University amenity
	Small commercial incubator space
	Carpark
	Grocery Store

#### **BUILDING REQUIREMENTS**

#### SETBACKS:

**Boundary between Fo3 + Fo4 if delivered as separate lots:** Lot Fo3 shall provide sufficient setbacks on the internal boundary to allow for development of Lot Fo4 up to the internal boundary.

**Ground level:** 2m setback on south boundary, plus colonnade/overhang requirements. No setbacks other boundaries. Lot Fo3 easement at ground level for Outdoor Common Room accessway, and Lot Fo4 easement at NE corner for existing trees.

**Podium levels (1-3):** 2m setback on south boundary. No setbacks other boundaries.

**Upper levels:** 5m setback on north and south boundaries. Overhanging is permitted at landmark points. Overhanging of easement below is permitted provided it does not impact on existing trees.

#### **EXPECTED HEIGHT:**

Lot Fo3: 7 levels Lot Fo4: 9 levels

#### EXPECTED YIELD:

Student beds Retail, F&B, amenity Commercial incubator 500 + 500 3,000 - 5,000 m<sup>2</sup> 500 m<sup>2</sup>

#### **PARKING REQUIREMENTS**

- Refer to Precinct Guidelines for required ratios for car and bicycle parking.
- The Bentley-Curtin parking cap applies to nonresidential bays. The maximum permitted nonresidential car bays for Lots Fo3 + Fo4 is 200.
- Car parking allocations may be transferred between lots or consolidated within one lot if desired, as the cap applies to Stage One as a whole rather than to individual lots.

#### **INDICATIVE INFRASTRUCTURE CAPACITIES**

- Electrical нv capacity 2.96 мvA
- Waste water capacity 6.0 L/s/Ha (NLA)
- Scheme water capacity 6.7 L/s/Ha (NLA)
- Natural gas capacity 16,000 мJ/hr

- Lots Fo3 and Fo4 may be delivered by separate developers, or amalgamated.
- Lot Fo3 shall allow for vehicle and service access off Road 4, through to Lot Fo4. Alternatives may be considered if design is exemplary.
- Lot Fo4 is the preferred location for a grocery store, subject to meeting all other objectives. Servicing (waste and deliveries) is preferred to be from basement level. Grocery store may be located at basement or lowerground (bus interchange) level.
- Provide multiple and varied retail mix in Lot Fo4 addressing Main Street and Pine Plaza. Retail entry to interface with Pine Plaza.
- Provide ground floor communal facilities in Lot Fo4 addressing Outdoor Common Room, including laundry and accessible changeroom (as per *Changing Places Information Kit*, August 2014).



LOT FO4

LOT FO3



## 4.11 LOTS F05 + F06



Refer to Place 03 for additional criteria.

#### DESCRIPTION

Area: 3,686m<sup>2</sup> + 3,118 m<sup>2</sup> Main Use: Commercial Short-Stay Apartments Secondary uses: Retail,food&beverage University amenity Academic Carpark

#### **BUILDING REQUIREMENTS**

#### SETBACKS:

**Boundary between Fo5 + Fo6 if delivered as separate lots:** Both lots shall provide sufficient setbacks on the internal boundary to allow for development of adjacent lot.

Ground level: No setbacks.

Podium levels (1-3): No setbacks.

**Upper levels:** 3m setback on north and south boundaries. Overhanging is permitted at landmark points.

#### **EXPECTED HEIGHT:**

Lot Fo5: 10 levels Lot Fo6: 5 levels

#### **EXPECTED YIELD:**

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Commercial or Academic	13,000 m²
Short-Stay rooms	100
Retail, F&B, amenity	1,000 – 1,500 m <sup>2</sup>

#### **PARKING REQUIREMENTS**

- Refer to Precinct Guidelines for required ratios for car and bicycle parking.
- The Bentley-Curtin parking cap applies to nonresidential bays. The maximum permitted nonresidential car bays for Lots Fo5 + Fo6 is 370.
- Car parking allocations may be transferred between lots or consolidated within one lot if desired, as the cap applies to Stage One as a whole rather than to individual lots.

#### **INDICATIVE INFRASTRUCTURE CAPACITIES**

- Electrical нv capacity 1.69 мvA
- Waste water capacity 3.4 L/s/Ha (NLA)
- Scheme water capacity 3.8 L/s/Ha (NLA)
- Natural gas capacity 5,000 MJ/hr

- Lots Fo5 and Fo6 may be delivered by separate developers, or amalgamated.
- Lot Fo5 shall allow for vehicle and service access off Road 1, to both lots at basement level. A shared basement carpark arrangement is required.
- Lot Fo5 is a key site requiring a built form design response to the Living Stream and Dolphin Dreaming Trail. Refer to 3.2.2 for more detail.
- Provide highly active ground floor 'make-it' or coworking spaces in Lot Fo6.
- Provide multiple and varied retail mix in Lot Fo5 and Fo6 addressing Main Street and Innovation Street.
- Upper ground level of Lot Fo6 to address Building 410 courtyard.



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# 4.12 LOT F07



Refer to Place 03 for additional criteria.

#### DESCRIPTION

Area:	3,933m²
Main Use:	Student Accommodation
Secondary uses:	<b>Residential Apartments</b>
	Retail, food & beverage
	University amenity
	Carpark

#### **BUILDING REQUIREMENTS**

#### SETBACKS:

**Ground level:** No setbacks. Easement at ground level for north-south pedestrian and vehicle access. Overhanging easement is permitted.

Podium levels (1-3): No setbacks.

**Upper levels:** 3m setback on west boundary. Overhanging is permitted at landmark points.

#### **EXPECTED HEIGHT:**

8 levels

#### **EXPECTED YIELD:**

Student beds	
Residential Apartments	
Retail, F&B, amenity	
Basement carpark	
for Curtin use	

#### **PARKING REQUIREMENTS**

- Refer to Precinct Guidelines for required ratios for car and bicycle parking.
- The Bentley-Curtin parking cap applies to nonresidential bays. The maximum permitted nonresidential car bays for Lot Fo7 is o. Temporary parking/ dropoff for service vehicles, and general Curtin parking as outlined in Special Conditions, is permitted.
- Car parking allocations may be transferred between lots or consolidated within one lot if desired, as the cap applies to Stage One as a whole rather than to individual lots.

#### **INDICATIVE INFRASTRUCTURE CAPACITIES**

- Electrical HV capacity 1.10 MVA
- Waste water capacity 1.9 L/s/Ha (NLA)
- Scheme water capacity 2.1 L/s/Ha (NLA)
- Natural gas capacity 8,000 мJ/hr

- Allow for north-south pedestrian and vehicle access via existing laneway, with minimum clearance of 5m.
- Liaise with Curtin to provide a basement carpark for general Curtin use.
- Provide multiple and varied retail mix in Lot Fo7 addressing Main Street and Innovation Street.



# 4.13 **LOT F11**



Refer to Place 01, 02, 04 & 05 for additional criteria.

#### DESCRIPTION

Area:	1,286 m <sup>2</sup>
Main Use:	Retail, food and beverage
	'Curtin showcase'
Secondary uses:	University amenity

#### **BUILDING REQUIREMENTS**

#### SETBACKS:

Ground level: No setbacks.

**Upper levels:** No setbacks. Overhanging is permitted at landmark points.

#### **EXPECTED HEIGHT:**

3-4 levels

#### **EXPECTED YIELD:**

'Showcase Curtin' development	ТВА
Retail, F&B, amenity	300 – 500 m²

#### **PARKING REQUIREMENTS**

- Refer to Precinct Guidelines for required ratios for car and bicycle parking.
- The Bentley-Curtin parking cap applies to nonresidential bays. The maximum permitted nonresidential car bays for Lot F11 is o. Temporary parking/ dropoff for service vehicles is permitted.
- Car parking allocations may be transferred between lots or consolidated within one lot if desired, as the cap applies to Stage One as a whole rather than to individual lots.

#### **INDICATIVE INFRASTRUCTURE CAPACITIES**

- Electrical HV capacity 0.19 MVA
- Waste water capacity o.4 L/s/Ha (NLA)
- Scheme water capacity o.4 L/s/Ha (NLA)
- Natural gas capacity 5,000 мJ/hr

- Redevelopment of Curtin Dome is adjacent to Lot F11. The extent and timing of redevelopment is at Curtin's discretion.
- Lot F11 is a key site requiring a design response to the Living Stream and Dolphin Dreaming Trail. Refer to 3.2.3 for more detail.
- No direct vehicle access is available to Lot F11. Service vehicle access is proposed via bus interchange.



# 4.14 **LOT A05**



#### DESCRIPTION

Area: 4,920 m² Main Use: Carpark End of trip facilities (Curtin supplied)

#### **BUILDING REQUIREMENTS**

SETBACKS: Ground level: No setbacks.

Upper levels: No setbacks.

**EXPECTED HEIGHT:** 

5 levels

#### **EXPECTED YIELD:**

Car bays	760
Bicycle parking bays	500
End-of-trip facilities	тв

#### **PARKING REQUIREMENTS**

• The Bentley-Curtin parking cap applies to nonresidential bays. The maximum permitted nonresidential car bays for Lot Ao5 is 760.

- Allow provision of end of trip facilities supplied by Curtin.
- Provide shelter and activation to major pedestrian corridor along west boundary.











Carpark, End of trip facilities

# 5.0 WORKING WITH VURTIN

# **ABOUT THIS SECTION**

This Chapter outlines the key requirements and conditions for the formulation, review and approval of development plans within Greater Curtin Stage One.

# 5.1 APPROVAL PROCESS

In providing an efficient and effective assessment and determination process, Curtin University aims to ensure that the placemaking, built form, architectural, sustainability and infrastructure outcomes represent national best practice. At the commencement of design, Developers shall demonstrate an understanding of national best practice through precedents, for approval by Curtin. Throughout the submission process, the Developer shall demonstrate how national best practice will be achieved.

In regard to the procurement of Development Application and Building License approvals, key Curtin University requirements include the following:

- The Developer shall be the 'applicant';
- Curtin University is required to provide written authorisation to any application documentation prior to it being submitted for approval to the relevant authority;
- If the authority approving the relevant application requires modifications to the submitted documentation, the Developer must liaise with, and gain agreement from, Curtin University;
- Curtin University has the right to require the Developer (as the applicant) to appeal any determination or conditions of approval;
- The Developer is required to include a Curtin University representative in any meetings involving the Developer and an authority involved in the process of approving an application.

The following steps outline the design formulation, submission and approval process required for development within the precinct.



#### 5.1.1 PRE-DEVELOPMENT APPLICATION

#### Step 1

The Developer and their project team meet with Curtin University to review the Request For Development Proposal (RFDP) Concept and discuss placemaking, design, structural and sustainability concepts.

#### Step 2

The Developer provides Curtin University with a Schematic Design report at the 30% Review Stage, addressing relevant Lot Specific Guidelines and the Objectives of the Precinct Guidelines.

The Developer meets with Curtin University to explain and discuss the submission. Curtin University provides a written response to the Developer, with focused feedback. The Developer is provided with an opportunity to meet with Curtin University to discuss feedback.

#### Step 3

The Developer provides Curtin University with preliminary Developed Design Report at the 80% Review Stage, explicitly addressing relevant Lot Specific Guidelines and the Objectives and Criteria of the Precinct Guidelines.

The Developer meets with Curtin University to explain and discuss the submission. Curtin University provides a written response to the Developer, with focused feedback. The Developer is provided with an opportunity to meet with Curtin University to discuss feedback.

#### 5.1.2 DEVELOPMENT APPLICATION

#### Step 4

As part of their Devlopment Application (DA), the Developer submits a finalised Developed Design Report to Curtin explicitly addressing relevant Lot Specific Guidelines and the Objectives and Criteria of the Precinct Guidelines. Curtin University provides written endorsement of the DA and Developed Design Report.

#### Step 5

The Developer submits a Development Application (DA), with Curtin University signing as land owner.

#### Step 6

Curtin University provides a DA assessment report to the Developer.

A DA involving development over or adjacent to existing or planned Public Transport Authority (PTA) bus and light-rail infrastructure may be referred to the PTA.

If the DA is deemed unsatisfactory by Curtin University, the Developer must amend the DA and revert back to Step 4.

Curtin University provides written consent to proceed and stamps the DA documents to be provided to the Town of Victoria Park by the Developer.

#### Step 7

The Developer submits the Curtin University-authorised documents to the Town of Victoria Park. The Town of Victoria Park determines whether advertising is required, and will forward the DA to the WAPC and the DAP Secretariat.

#### Step 8

The wAPC prepares a Responsible Authority Report, with input from the Town of Victoria Park and other authorities.

#### Step 9

The DAP determines the application to the Development Application, and notifies the Developer of its conditional approval or refusal.

#### 5.1.3 BUILDING LICENCE APPLICATION

#### Step 10

The Developer submits Working Drawings to Curtin University demonstrating compliance with the Development Approval (plans and conditions) and Development Guidelines, and highlighting any variance from the Development Application.

#### Step 11

Curtin University provides Curtin University provides a written response to the Developer, with focused feedback.

Working Drawings for construction over or adjacent to existing or planned PTA bus and light-rail infrastructure may be referred to the PTA.

If the Working Drawings are deemed unsatisfactory by Curtin University, the Developer must amend the Working Drawings and revert back to Step 9.

Curtin University provides written consent to proceed and stamps the documents to be provided to the Town of Victoria Park by the Developer, for Building Licence Approval.

#### Step 12

The Developer submits the Curtin University-authorised documents, including a Compliance Report, to the Town of Victoria Park. The Town of Victoria Park will commence its assessment of the Working Drawings upon receipt of the University-authorised documents.

#### Step 13

The Town of Victoria Park issues a Building Permit.

#### 5.1.4 CONSTRUCTION

#### Step 14

Prior to the commencement of construction, the Developer provides Curtin University with digital copies of the Building License documentation complying with Curtin University CAD standards.

#### Step 15

The Developer undertakes construction.

The Developer provides a report on construction progress and compliance, at intervals required by Curtin University.

#### Step 16

Curtin University undertakes ongoing monitoring and building management to ensure compliance with the Building Permit, placemaking and sustainability requirements.

Curtin University and Town of Victoria Park visit and review construction progress at relevant milestones.

#### Step 17

At Practical Completion prior to the Request for Occupancy, as-constructed documentation complying with Curtin CAD standards, must be provided to Curtin University.

#### Step 18

The Town of Victoria Park approves a Request for Occupancy once construction has been satisfactorily completed.

# 5.2 **DESIGN REVIEW**

The review of concepts and application material will be undertaken by a committee consisting of Curtin University and a Design Review Panel (DRP) appointed by Curtin University. The DRP will include external appointments as appropriate, including Town of Victoria Park and Department of Planning personnel. Curtin University authorises the committee to review, approve, or disapprove all reports, site plans, architectural plans, and other submission material.

The committee is responsible for reviewing plans for all development, including construction of any type including landscaping, lighting, signage, infrastructure and all other improvements. All plans are reviewed to determine their compliance with these Development Guidelines and any other relevant University-based development controls. This process ensures harmony of design and compatibility of use throughout the development of the Stage One and Greater Curtin.

# 5.3 **REVIEW PROCESS**

The purpose of the review process is to facilitate quality development through evaluation and approval. These Development Guidelines establish consistent standards of quality to be used in evaluation of each development. As described in this document, the review procedures are intended to provide an early interface between the Developer and Curtin University so that preparation of construction documentation can be completed in a timely and efficient manner.

The Developer should meet with Curtin University early in the planning process to discuss the attributes of the site, the preliminary concept for development, these Development Guidelines, and to develop a schedule for the approval process.

All Developers must follow the specific procedures involving submission of documents and review requirements. All construction documentation must be in compliance with these Development Guidelines.

No activity shall commence within Greater Curtin Stage One nor shall any submission to any governmental agency be filed until the plans have been approved and authorised by Curtin University.

# 5.4 INTEGRATING WITH CURTIN INFRASTRUCTURE

Development at Curtin University is a unique situation. Traditional arrangements between the Developer and relevant Authorities with regard to power, gas, water, fire, stormwater and sewerage services, waste collection and deliveries do not apply.

Each lot has indicative limits for gas, water, sewer and electrical capacity. Refer to 4.0 Lot Specific Guidelines for details. Curtin University will confirm its role as supplier for all utilities with the Developer.

Developers shall undertake due diligence to ensure full understanding of how new developments will integrate with Curtin infrastructure. Developers shall not rely on assumptions which may be true in more traditional development arrangements.

The Developer is responsible for complying with Curtin Technical Guidelines and receiving Curtin University approval prior to commencement of construction. The Developer shall also contact the Portfolio Manager Public Realm & Infrastructure for the most up-to-date information.

# 5.5 VARIANCES

Curtin University may authorise consideration of variances from the Development Guidelines when circumstances such as topography, natural obstructions, hardship, aesthetic or environmental objectives or considerations may warrant, as long as the variances are not in conflict with the objectives of the Development Guidelines.

Curtin University will provide the Developer with a report confirming its assessment of the variation request. The granting of variances shall not operate to waive or to render unenforceable any of the terms and provisions of the Development Agreement and regulations of the University for any purpose except as to a particular property, particular maintenance and operation activity, provisions, and instances covered by a particular variance.

Where there is more than one provision within the Development Guidelines that covers the same subject matter, the provision that imposes higher standards or requirements shall govern.

# 5.6 DISCRETIONARY CLAUSE

Curtin University may support a Development Application submission where the Developer has departed from the Development Criteria where, in Curtin University opinion, the Developer has demonstrated that the alternative solution meets the Development Guideline Objective and the intent of the Development Criteria. Compliance with the performance standards does not guarantee approval. The decision making body may refuse Development Applications that are considered not in keeping with the Objectives and Requirements of the Development Guidelines.

Each application for development approval will be assessed on an individual basis with the understanding that the approval of an alternative solution will not set a precedent for other developments.

# 5.7 DOCUMENTATION REQUIREMENTS

At the Request For Development Proposal (RFDP) stage, Pre-Development Application stage and the Development Application stage, it is expected that the Developer will submit a report that explicitly addresses the following:

- Digital documentation of the proposed development in a format in accordance with the University's CAD standards;
- How compliance is achieved for each of the Objectives and Criteria of the Precinct Guidelines contained within Chapter 3. Any non-compliance shall be explicitly highlighted;
- How compliance is achieved for all Building Requirements, Parking Requirements, Infrastructure Requirements, Special Conditions and other items contained within Chapter 4 – Lot Specific Guidelines, for each relevant lot that is the subject of the Developer's proposal. Any non-compliance shall be explicitly highlighted;
- Design Statement prepared by a registered architect outlining measures undertaken to achieve design excellence representing National Best Practice for buildings and public realm;
- Sustainability matrix signed by a registered Green Star Professional demonstrating that the development upholds and contributes to the Greater Curtin Masterplan 5 Star Green Star Communities rating;

- Evidence, signed by registered Green Star Professional, that 5-Star Green Star Design & As-Built has been achieved, and a copy of GBCA certification if available;
- Compliance with the access obligations of the Disability Discrimination Act 1992 and all applicable Australian Standards and University Policies;
- Compliance with Curtin University Security Design Standards;
- A Retail Sustainability Assessment if a proposal contains floorspace for 'University Convenience Offerings' that exceeds the amount identified in the Curtin University Non-Residential Analysis Report;
- CPTED and Safety In Design reporting.

# 5.8 CONSTRUCTION PHASE

#### 5.8.1 CONSTRUCTION DOCUMENT CHANGES

All changes to plans after Building License approval are subject to review and endorsement by Curtin University, followed by approval by the Town of Victoria Park. Any proposed change representing 1 percent of the total construction cost or greater shall be provided to Curtin University in writing.

#### 5.8.2 CONSTRUCTION SITE MAINTENANCE

All construction storage and equipment yards shall be located to minimise visibility from off-site and are subject to Curtin University approval. Construction sites shall be maintained in a neat and orderly manner. All waste shall be kept in enclosed containers and emptied frequently.

Construction access shall be coordinated with and approved by Curtin University. Special care shall be taken to protect existing assets from damage. Dirt stockpiles are only permitted during construction with approval by Curtin University, and must be removed upon building occupancy.

#### 5.8.3 DEVELOPER'S RESPONSIBILITY

During the construction phase, the Developer's key responsibilities shall include the following:

• The Developer is responsible for obtaining the applicable Air Quality permits and complying with Air Quality regulations. The Developer is responsible for complying with any temporary storm water requirements that are applicable and maintaining these features during construction.

- The Developer is responsible for identifying the location of all existing underground utilities and protecting them during construction. Repair of any damage to existing utilities caused by construction is the responsibility of the Developer to Curtin University's satisfaction.
- The Developer shall obtain approval from Curtin University before any construction on or over designated common open spaces areas owned and maintained by the University. All repairs of damage within these areas are the responsibility of the Developer and shall be completed to Curtin University's satisfaction and in a timely manner.
- Temporary facilities (such as construction trailers, waste containers, portable toilets, and water tanks) must conform to minimum building setbacks. Temporary facilities must be maintained in good repair and screened from view. All temporary facilities shall be located on site.
- Construction related parking shall be located on-site.
  Construction sites shall provide fencing around the entire construction areas as required by applicable building codes. Temporary fencing is only permitted during construction and must be removed upon building occupancy.

#### 5.8.4 CONSTRUCTION INSPECTION

From time to time, Curtin University and Town of Victoria Park (or their representatives) may inspect a construction site for compliance with approved construction documents and plans, and the Development Guidelines. A postconstruction project review will be made to verify compliance with Development Guidelines and approved construction documents.

#### 5.8.5 POST-CONSTRUCTION PROJECT REVIEW

A post-construction project review may be made by Curtin University and Town of Victoria Park to verify compliance with Development Guidelines and approved construction documents. All required inspections under the Town of Victoria Park rules and regulations shall be observed.

A damage/compliance deposit is required for all projects, prior to Curtin University approval.

#### 5.8.6 CONSTRUCTION VIOLATIONS

If, in the course of an inspection, Curtin University or Town of Victoria Park find a violation of the conditions of approval or find that construction is not in conformance with requirements, a written Notice of Violation will be provided to the Developer indicating the nature of the violation. If the violation is substantial in nature, construction must cease immediately upon receipt of the Notice of Violation. If the violation is not substantial in nature, construction may continue, subject to correction of the violation. Violations shall be resolved immediately.

#### 5.8.7 NOTICE OF COMPLIANCE

Upon completion of construction, the Developer shall submit a Notice of Completion and Curtin University will inspect the project within 10 business days. The purpose of the inspection is to determine if the improvements have been constructed or installed consistent with the approved plans and to determine that all other aspects of site development are in compliance with the Development Guidelines. This inspection does not satisfy Town of Victoria Park inspection requirements, but it is necessary to complete the development review process with Curtin University.

If Curtin University identifies items needing completion, a re-inspection will be required. After all items are completed in compliance, the receipt of the Certificate of Compliance by Curtin University indicates that the project has received full construction approval from Curtin University.

The Developer may then proceed to obtain a Certificate of Occupancy from the Town of Victoria Park. The lease will not be executed without both documents.

# 6.0 APPENDICES

# APPENDIX 1/ GLOSSARY OF ACRONYMS

Computer Aided Design/ Documentation
Closed Circuit Television
Crime Prevention through Environmental Design
Development Application
Disability Discrimination Act
Design Review Panel
Expression of Interest
Environmentally Sustainable Design
Green Building Council of Australia
Greater Curtin Stage One
Metropolitan Region Scheme
Operational Waste Management Plan
National Construction Code
Curtin University Project Control Group
Public Transport Authority
Request for Development Proposal
State Planning Policy
Town of Victoria Park
Western Australian Planning Commission

# APPENDIX 2/ LIST OF REFERENCED DOCUMENTS

Greater Curtin Masterplan (Books A, B & C) Greater Curtin Stage One Place Activation Strategy Curtin University Security Design Standards Curtin University Wayfinding Strategy GBCA Communities Curtin University Environmental Risk Management Plan Curtin University Transport & Movement Plan Curtin University Climate Adaptation Plan Curtin University Emergency Management Plan Curtin University Technical Guidelines Changing Places Information Kit, August 2014 (available at www.changingplaces.org.au)

# **APPENDIX 3/ IMAGE CREDITS**

- p31/Left/ Curtin Stadium. Photos courtesy of Curtin University.
- p34/Left/ Curtin campus. Photo courtesy of Curtin University.
- p40/Right/ Markthal, Rotterdam, MVRDV. Photo by Franklin Heijnen. cc.
- p42/ Top left/ Darling Quarter, Sydney. Photo by Yida Xu on Flickr. cc.
- p42/Bottom left/ GSW HQ, Berlin, Sauerbruch Hutton Architects. Photo by Mariano Mantel. cc.
- p42/Right/ Image by ARM Architecture.
- p43/Right/ Tianjin Bridged Gardens, Tianjin, Turenscape.
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- p50/Bottom left/ Didden Village, Rotterdam, MVRDV. cc.
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- p52/Top/ Bank Street, Adelaide, Taylor Cullity Lethlean. Photo by Dan Schultz. Used with permission.
- p52/Bottom/ Generator Hostel, Barcelona. Photo by Fei Ong. Used with permission.
- p54/Top Left/Photo by Marcus Harpur in 'The New Office'.
- p54/Bottom Left/ Rundle Lantern, Adelaide, вв Architects. Photo by Kylie Macey. cc.
- p54/Right/ Wozoco Apartments, Amsterdam, MVDRV. Photo by Rory Hyde on Flickr. cc.
- p56/Left/ The Park, Prague, Cigler Marani Architects. Photo by Cigler Marani Architects. Used with permission.
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- p58/Right/ Londsdale Street Dandenong, Taylor Cullity Lethlean. Photo by John Gollings. Used with permission.
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- p63/Right/ Markthal, Rotterdam, MVRDV. Photo by Wouter Hagens. cc.
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- p65/Top/ State government offices, Mary St Brisbane. Mural and photo by Sue Beyer. Used with permission.
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# **APPENDIX 4/ PLANTING LIST**

Botanic Name	Common Name	Height (m)	Spread (m)	Street Tree	Buffer (B)	Wet (W)	Dry (D)
Native Trees							
Acacia saligna	Orange Wattle	5	4		В	W	D
Agonis flexuosa	WA Peppermint	12	7	*	В		D
Acmena smithii	Lilly Pilly	8	5	*			
Allocasuarina fraseriana	Common Sheoak	15	8	*	В		D
Allocasuarina equestifolia	Beach Sheoak	4-6		*	В		
Allocasuarina torulosa	Rose sheoak	15		*			D
Angophora costata	Smooth Apple Gum	15	7				D
Banksia ashbyi	Ashby's banksia	2-4	2				D
Banksia attenuata	Candle Banksia	4-12	3-8		В		D
Banksia coccinea	Scarlet banksia	2	2			W	
Banksia fraseri	Dryandra	0.5-1	1		В		D
Banksia gardneri	Prostrate banksia	0.35	1.5				D
Banksia grandis	Bull banksia	8	5	*	В	W	D
Banksia hookerisana	Hooker's Banksia	2-3	2-3		В		D
Banksia ilicifolia	Holly-Leaf Banksia	10	8			W	
Banksia littorailis	Swamp banksia	10	8			W	
Banksia menziesii	Firewood Banksia	10	8		В		D
Banksia mucronualata	Swordfish dryandra	2	0.5				D
Banksia nivea	Honeypot dryandra	0.5-1	1				D
Banksia nobilis	Golden dryandra	0.6-4	2				D
Banksia prionotes	Saw-toothed Banksia	5 <del>-</del> 10	3-5				D
Banksia quercifolia	Oak-leaved banksia	1-2	2		В		D
Banksia sessilis	Parrot bush	4			В		D
Callistemon 'kps'	King's Park Special	3-5	3-4	*	В	W	
Callistemon viminalis 'captain cook'	Weeping Bottlebrush	3-5	3-4	*	В	W	
Casuarina cunninghamiana	River Sheoak	20	12		В	W	
Casuarina equisetifolia ssp.equisetifolia	Horse Tail Sheoak	12-18	8	*	_	W	-
Corymbia calophylla	Marri				В		D
Corymbia ficifolia	Red flowing gum	4-8	4-8			w	D
Corymbia maculata	Spotted gum	20	10			W	D
Eucaluptus caesia	Gungurru, Silver Princess	3.5-6	3			W	D
Eucalyptus forrestiana		40.40			_	vv	-
Eucalyptus gompnocephala	luart	12-40	5-15		В	vv	D
Eucalyptus macrandra	Long-flowered marlock	5	00			vv	P
Eucalyptus marginata	Jarran	30	20				D
	Selected Come	10 00	12			vv	D
Eucaryptus saimonophiola	Salmon Gum	12-30	10.15		р	14/	D
Eucalyptus rudis	Pioded Gum	10-25	10-15	*	В	VV NA/	P
Eucalyptus sideroxylon	Red Iron Bark	15-20	10-15		Р	VV NA	D
Eucalyptus spathulata	Swamp Mallee	0-10	0		Б	vv	D
Eucalyptus tetragona		2-5 5 10	4.0				D
Eucarypius iorquala	Nativo Eranginani	5-10	4 <b>-</b> 0			14/	D
Moerozomio riodloj	Zamia	0	5		P	vv	D
Macrozanna nedler		3			В		D
Melaleuca amilians	Bracelet honey myrue	4-5	F	*		14/	D
Melaleuca lanceolata	Flow Leafed Departments	7 14	5			VV	
Melaleuca Illarillolla	Hax Leated Paperbark	/-14	b-Aug		Р	VV VA/	
Meleleuca preissiaria	woodong Broof Loof Deserts and	4-10	3-0		в	VV	
Melaleuca quinquinervia	Moonob Swomp Don-that	10-15	Ö	*		VV VV	
Muutaia flaribunda	WA Christmas Trac	10	4 <b>-</b> 0		D	vv	D
wuyisia iionbunua Yanthambasa projesii	wa Uninsumas Tree	10	р С		В	14/	D
Aanmonnoea preissii	Grass tree	4	2		в	VV	U





Callistemon viminalis 'captain cook' -



Eucalyptus torquata

Botanic Name	Common Name	Height (m)	Spread (m)	Street Tree	Buffer (B)	Wet (W)	Dry (D)
Exotic Trees							
Brachychitonacerifolius	Illawarra Flame Tree						
Carya illinoinensis	Pecan	20	15				D
Cercis siliquastrum	Judas			*			
Ceretonia siliqua	Carob	10	7			W	D
Erythrina sykesii	Coral Tree	15	12				D
Delonix regia	Poinciana	12	8				D
Lagerstroemia indica	Crepe Myrtle	7	5				D
Liquidambar styraciflua	Liquidambar	25	12	*			D
Metrodsideros excelsa	NZ Christmas Tree	10	6	*	В		
Olea europaea	Olive	8	5	*			D
Pinus pinaster	Pinaster Pine	30	12			W	D
Platanus orientalis digitata	Cutleaf Plane	25	25	*			D
Pyrus ussuriensis	Manchurian Pear	8-15	8-12	*		W	
Sapium sebiferum	Chinese Tallow	10	8			W	
Schinus molle	Peppercorn Tree	10	7				D
Ulmus parvifolia	Chinese Elm	15	9	*		W	
Palm Trees							
Archontophernix cunninghamiana	Bangalow Palm	20				W	
Howea forsteriana	Kentia Pa <b>l</b> m	10	6			W	





Liquidambar styraciflua



-



Ulmus parvifolia



Howea forsteriana

Botanic Name	Common Name	Height (m)	Spread (m)	Street Tree	Buffer (B)	Wet (W)	Dry (D)
Shrubs							
Acacia pentadenia	Karri wattle				В		
Acacia truncata	Spreading	1.2m			В		
Acacia vestita	Hairy wattle	3m			В		
Agapanthus sp.	African Lily					W	
Agonis flexuosa nana		1m				W	
Anigozanthos	Kangaroo Paws						
Astartea scoparia						W	
Beaufortia aestiva	Summer Flame	1.5m					D
Billardiera heterophylla	Australian Bluebel					W	
Callistemon phoeniceus	Fiery bottlebrush	2m			В		
Calothamnus quadrifidus		2m			В		D
Clivia sp.	Fire Lily					W	
Correa reflexa	Native Fuchsia	1m					D
Cyathea cooperii						W	
Darwinia citriodora	Lemon-scented darwinia					W	
Daviesia triflora		0.6m			В		D
Diospyros sp.	Sweet persimmon					W	
Eremophila glabra	Tar Bush	3m				W	
Ficinia nodosa	Knotted club rush	0.6m				W	
Grevillea ella bella		0.6-1m			В		D
Grevillea lemon supreme		1.2m				Ν	
Grevillea nudiflora		0.7m					D
Hakea varia	Variable-leaved Hakea	4m	3m			W	
Hypocalymma angustifolium	White Myrtle					W	
Kunzea glabrescens	Spearwood					W	
Lepidosperma gladiatum	Coastal sword sedge	0.6m				W	
Lepidosperma squamatum					В		
Leucophyta brownii	Cushion bush	0.6m					D
Leucophyta canal rocks		0.8m			В		D
Lomandra tanika	Spiny-heahed mat-rush						
Maireana oppositifolia	Bluebush	0.8m					D
Melaleuca cardiophylla	Tangling Melaleca	2m			В		
Melaleuca little nessie		2m			В		D
Melaleuca megacephela		2m			В		
Melaleuca nesophila		3m			В		
Melaleuca systena							D
Nitraria billardierei	Nitre bush	2m	4m				
Patersonia occidentalis						W	
Pittosporum 'Miss Muffet'	Dwarf Pittosporum					W	
Phlebocarya ciliata						W	
Phormium tenax	New Zealand Flax					W	
Phyllanthus calycinus	False Boronia	1.2m				W	
Rosmarinus officinalis	Rosemary						D
Scaevola nitida	Shining fanflower	2m					D
Scholtzia involucrata	spiked Scholtzia					W	
Sollya heterophylla	Native bluebell					W	
Strelitzia reginae	Bird of Paradise					W	
- Westringia morning light		0.5m			В		D
Westringia smokey		1m			В		D



Calothamnus quadrifidus 🎆



Leucophyta brownii



Scaevola nitida

Botanic Name	Common Name	Height (m)	Spread (m)	Street	Buffer (B)	Wet (W)	Dry (D)
Ground Cover							
Adenathos cueatusc"Coral Carpet"	Woolly Bush						
Baumea articulata	Jointed Rush					W	
Bolboschoenus caldwellii	March Club-rush					W	
Brassica campestris	Canola , Rape					W	
Carex inversa	Knob Sedge					W	
Chaetanthus aristatus						W	
Conostylis aculeata	Prickly Conostylis	0.4m			В	W	
Conostylis juncea				*		W	
Conostylis setigera	Bristly Cottonstylis			*		W	
Dampiera linearis	Common Dampiera			*		W	
Dianella caerulea	Flax Lily					W	
Dianella revoluta var. Divaricata		0.6m			В		D
Eleocharis acuta	Common Spikerush					W	
Eremophila kalbarri carpet	·	0.4m				W	
Gahnia trifida	Coast Saw-sedge					W	
Gastrolobium capitatum	-	0.8m				W	
Grevillea crithmifolia		0.5m					D
Haemodorum spicatum	Mardja					W	
Hemiandra pungens	-	0.1m					D
Hypolaena exsulca						W	
Juncus kraussii						W	
Juniperus conderta	Shore Juniper					W	
Lepidosperma longitudinale						W	
Leptocarpus laxus						W	
Macarthuria australis						W	
Meeboldina cana						W	
Meeboldina scariosa						w	
Schoenoplectus validus	Lake Club-rush					w	
Schoenus subfascicularis						w	
Thysanotus patersonii						W	
Climber							
Hardenbergia comptoniana	Native Wisteria						D
Hibbertia scandens	Snake Vine					w	_
Trachelospermum jasminoide	Star Jasmine					w	









Hardenbergia comptoniana







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