



THE UNIVERSITY OF
**WESTERN
AUSTRALIA**



2020 UWA Crawley Campus **Masterplan**

UWA 2030

Mission

To provide world-class education, research and community engagement for the advancement of the prosperity and welfare of our communities.

Vision

Creating the next generation of global leaders through experience-rich education and world-leading, trustworthy research.

Motto

Seek Wisdom

Our promise

As a university we will:

- prepare our students to be globally-relevant and responsible leaders
- enable and promote trustworthy and influential research
- build just and equitable societies
- work closely with our communities to improve our environment
- recognise and value the Noongar people, the traditional owners rights, culture and values.

The University of Western Australia acknowledges that its campus is situated on Noongar land, and that Noongar people remain the spiritual and cultural custodians of their land, and continue to practise their values, languages, beliefs and knowledge.



UWA 2020–25 Strategic Plan

It is our place that defines our uniqueness. Western Australia is large and diverse. We exist in a state of rich biodiversity, immense coastlines with two ocean borders, multiple climate bands, abundant natural resources, both remote and urban communities, and radio-quiet skies. This provides a unique living laboratory for research and education to flourish.

Perth is Australia's only west-facing capital city, providing a gateway to the nations of the Indian Ocean Rim. UWA is Western Australia's pre-eminent university and one

of only a handful of global top-100 universities in the country, with strong ties with partners and communities.

Our campus is situated next to the beautiful Kings Park and Swan River – both immensely important places to the Whadjuk Noongar tradition. Longstanding Noongar knowledge and culture provide a rich and unique lens through which we can view and understand our environment.

We are privileged to draw on the wisdom of our place in the world.

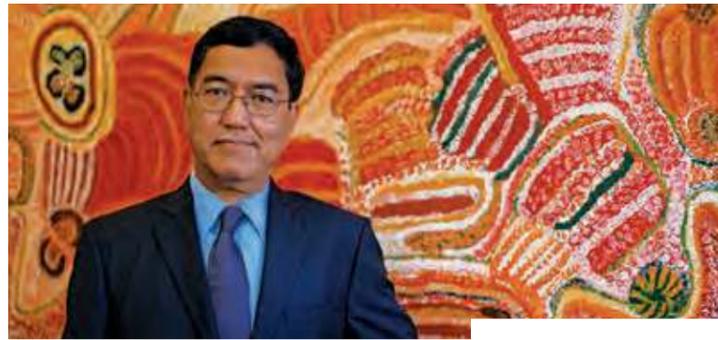
2020 UWA Crawley Campus Masterplan

Every 10 years The University of Western Australia prepares a Campus Plan which provides the State Government and the community with information on the

University's planning intentions for its Crawley campus. This Masterplan will be lodged with the Western Australian Planning Commission on the approval of the Senate.

Message from the Vice-Chancellor

A Masterplan created by our community, for a progressive, resilient and sustainable future.



We are privileged to have a beautiful campus on the lands of the Whadjuk Noongar people. Its future development must be sensitive to the innovative nature of our education and research, and the cultural richness of our diverse communities.

Our masterplanning process is conducted every 10 years. In shaping the 2020 UWA Crawley Campus Masterplan, the University has consulted extensively with the UWA community and attracted international leaders in planning and environment.

The result is a Masterplan that optimises the scale and composition of the University's physical assets and identifies strategies and necessary investments over the coming years to maintain a contemporary campus which provides a world-leading research and learning environment. This aligns with the University's strategic vision, shapes the development of the campus, and ensures it has a progressive, resilient and sustainable future.

Importantly, this Masterplan will guide rejuvenation and activation of the University's core campus to consolidate activities and provide facilities for our students, staff and the broader community to connect and collaborate over the next decade and beyond.

I take this opportunity to thank our community for their contribution and I am pleased to endorse the UWA 2020 Crawley Campus Masterplan.

A handwritten signature in black ink, appearing to read 'Amit Chakma'.

Professor Amit Chakma
Vice-Chancellor



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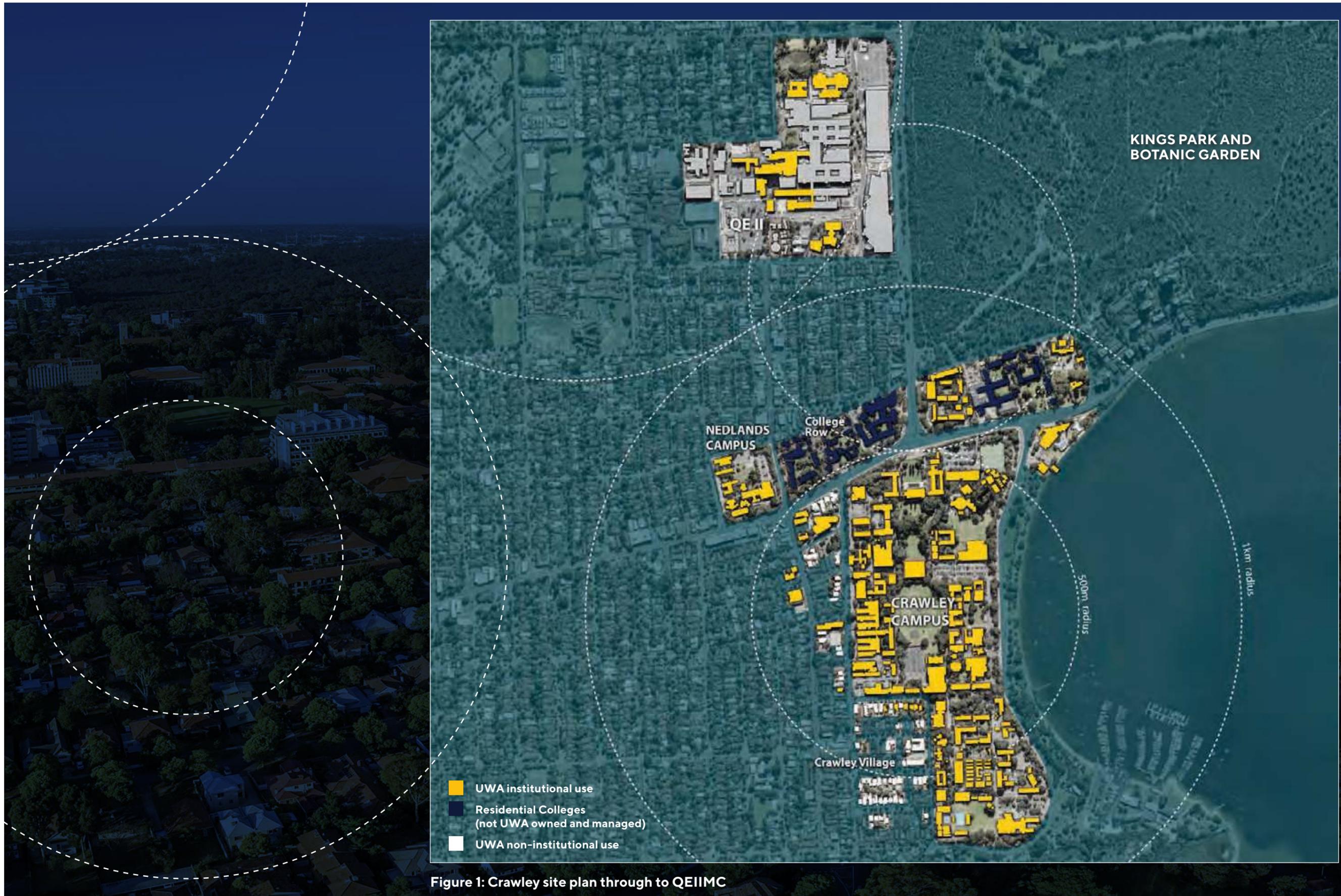


Figure 1: Crawley site plan through to QEII MC

1.0 EXECUTIVE SUMMARY

The 2020 UWA Crawley Campus Masterplan is a shared vision that outlines a set of design initiatives around the physical planning of the University for the next decade and beyond. It is a strategic framework that will guide and optimise the development of a sustainable and active campus, while leveraging off its physical and cultural setting, allowing flexibility in development solutions and an incremental approach.

The Masterplan is firmly focused on anticipating what's next for the campus. Rejuvenation and activation of the University's existing built and landscaped environment are key foundations, which will enable consolidation of activities, and enhanced student, staff and community engagement.

A primary focus of this Masterplan is to remain respectful of the University's past, and provide resilience for its future. It provides an agile framework to meet the needs and opportunities that will arise as the campus develops further.

UWA continues to build on its strong foundations, transforming in response to the changing external environment to ensure we stay at the leading edge of knowledge creation and its translation for societal benefit.

The Masterplan was informed using multiple planning tools and through consultation with UWA staff, students, Convocation, campus users and community.

The Estate Strategy defined the challenge:

'The University needs to invest in its physical assets in the Crawley QEII MC Activity Centre and realise the value of its surplus asset holdings to fund priority activities, including capital investment, and reduce operational costs.'

The Estate Strategy highlighted the following findings, themes and issues for focus:

- a significant capacity to reduce current asset holdings and rectify 'thin' utilisation
- opportunity to consolidate activity to a small number of core sites (excluding distributed regional satellites)
- urgent need to contemporise the campus in terms of space and digitisation through alignment of assets to address demand (with particular focus in the early years on library, teaching and laboratory spaces)
- broaden and intensify the presence of industry, enterprise and other partners on campus
- opportunity to establish new campus capabilities (improve activation of current locations, conduct selected activity in the CBD, increase health care facilities, and intensify digitisation / smart campus)
- build strong linkages between Crawley and QEII MC
- activate the campus as a vibrant destination for students, staff and community
- maximise the unique and culturally-significant setting alongside Matilda Bay, Pelican Point and the Swan River.

UWA seeks to identify resources and invest in the key areas of Crawley campus and QEII MC. A pre-requisite for determining how to approach the process of rejuvenation is to rationalise outlying assets that currently produce a limited return and are not making a full contribution to the mission of UWA. When the approach to this is resolved, the University can focus on three short to medium-term strategic aims: Rejuvenation, Activation, and Strategic new build construction.

Rejuvenation

UWA has enough space in its current estate. It needs to commence the short to medium-term process of rejuvenation of existing facilities and associated precincts in order to increase efficiency, improve capacity and the experience for all. This needs to be consistent and programmatic – not disregarded in favour of new buildings and the associated expense. This will be ongoing as we seek to deliver and maintain relevant and contemporary spaces.

Activation

UWA boasts a vibrant community and embarking on a systematic and sustained, dynamic and exciting program of activation will enrich the experience of campus users and create a vibrant 'sticky campus' – a place where students, staff and others will want to come, and choose to stay. A review of the delivery and organisation of activation on campus will assist in improving its impact and create an experience that can be celebrated by the University community.

Strategic new build construction

With rejuvenation and activation as the foundation for the Masterplan, new buildings will likely only be in response to land or asset reorganisation. This could result from:

- planned campus co-location or consolidation
- realising the best use and ownership of landholdings
- where an essential scheme can be proposed, designed and funded more rapidly.

Guided by identified and strategic academic need, there is then scope for academic units to progress strategically-aligned and individual initiatives.

The sum effect of focus and investment in these three distinct programs – rejuvenation, activation, strategic new build construction (medium to long-term) – will materially improve the experience for all campus users. The University's core campuses will then:

- offer excellence in both the student and staff experience
- provide a contemporary and sustainable environment necessary for driving high-quality teaching, research, enterprise, extra-curricular, and pastoral activities
- be safe and secure while simultaneously open, engaging and accessible
- demonstrate a visible integration of a cultural narrative
- have infrastructure that is resilient and digitally connected
- be a hive of activity, with the Activation Plan and building refurbishment progressing in coordinated symbiosis.

2.0 MASTERPLAN PROCESS

The Masterplan builds upon the 2010 Campus Planning Review, considering changes in economic, social and environmental contexts over the past decade. The focus is on the decade 2020–30 however the Masterplan also sets the foundations for campus development through to 2050. It seeks to provide a continuity of the planning ethos that has underpinned the development of the Crawley campus with greater emphasis on sustainability, our natural environment and intercultural heritage.

The Masterplan process was conducted over a two-year period, commencing with the review of the condition of the University’s building assets, followed by the preparation of an Estate Strategy in 2018. The aim of the Estate Strategy was to aid the University in determining how to manage its physical assets in order to meet its long-term objectives. UWA’s estate exists to serve the University’s institutional mission: *research, teaching and outreach for public benefit*. This mission helps guide all considerations about the planning and delivery of the University’s future space and facilities. Consultation during this phase was internally focused at the Executive and senior leaders. A strategic outlook to the challenges, opportunities and priorities of each of the academic units, Research, Education, Community and Engagement (now Global Partnerships) portfolios and Corporate Services was established.

The Masterplan concept followed in 2019, aligning with the launch of UWA 2030 and 2020–25 Strategic Plan. The Masterplan concept outlines the aspirations for the University’s estate development over the next ten years. It was guided by the strategic development principles established in the Estate Strategy and the recommendations from a suite of strategies, including:

- a space model to inform the size and shape of the University’s estate
- student experience analysis to understand the campus and its facilities through the student lens
- campus activation.

The Masterplan is the sum of this document and the following planning tools:

- Masterplan concept (activation – rejuvenation – strategic new build)
- Environmental Sustainability Strategy
- Transport Strategy
- Crawley Cultural Heritage Mapping
- Crawley Campus Landscape Strategy
- Crawley Infrastructure Strategy.

Engagement with identified key internal stakeholders and the broader community formed a significant contribution towards the development of the Masterplan. UWA Masterplan Conversations sought the input of campus users, community and stakeholders as UWA looked to shape its future Masterplan at two key points in the process. The first phase was prior to the completion of the Masterplan concept in early 2019 and sought extensive stakeholder input. The second phase was held towards the end of 2019 and provided the opportunity for stakeholders to learn more about the Masterplan and give input to inform the direction and completion of the strategies. To support the communications and engagement process with interested stakeholders, a UWA Masterplan Conversations website was established, providing further opportunity for stakeholders to submit ideas and feedback, as well as be aware of the Masterplan progress. Contributions of note include those from the Convocation of UWA Graduates, Lady Jean Brodie–Hall, Alumni and University Donors, as well as local and state government departments.

Rejuvenation is used in this document to describe the process of uplifting and refurbishing of existing facilities and improving their associated precincts for better efficiency, amenity and student experience. It is used to describe a more holistic intervention to address the issues raised in both the Estate Condition and Student Experience reports. **Refurbishment**, on the other hand, is the term used in the Masterplan Concept, prepared by Turnbery Consultants. It is one of the three pillars in the development model.

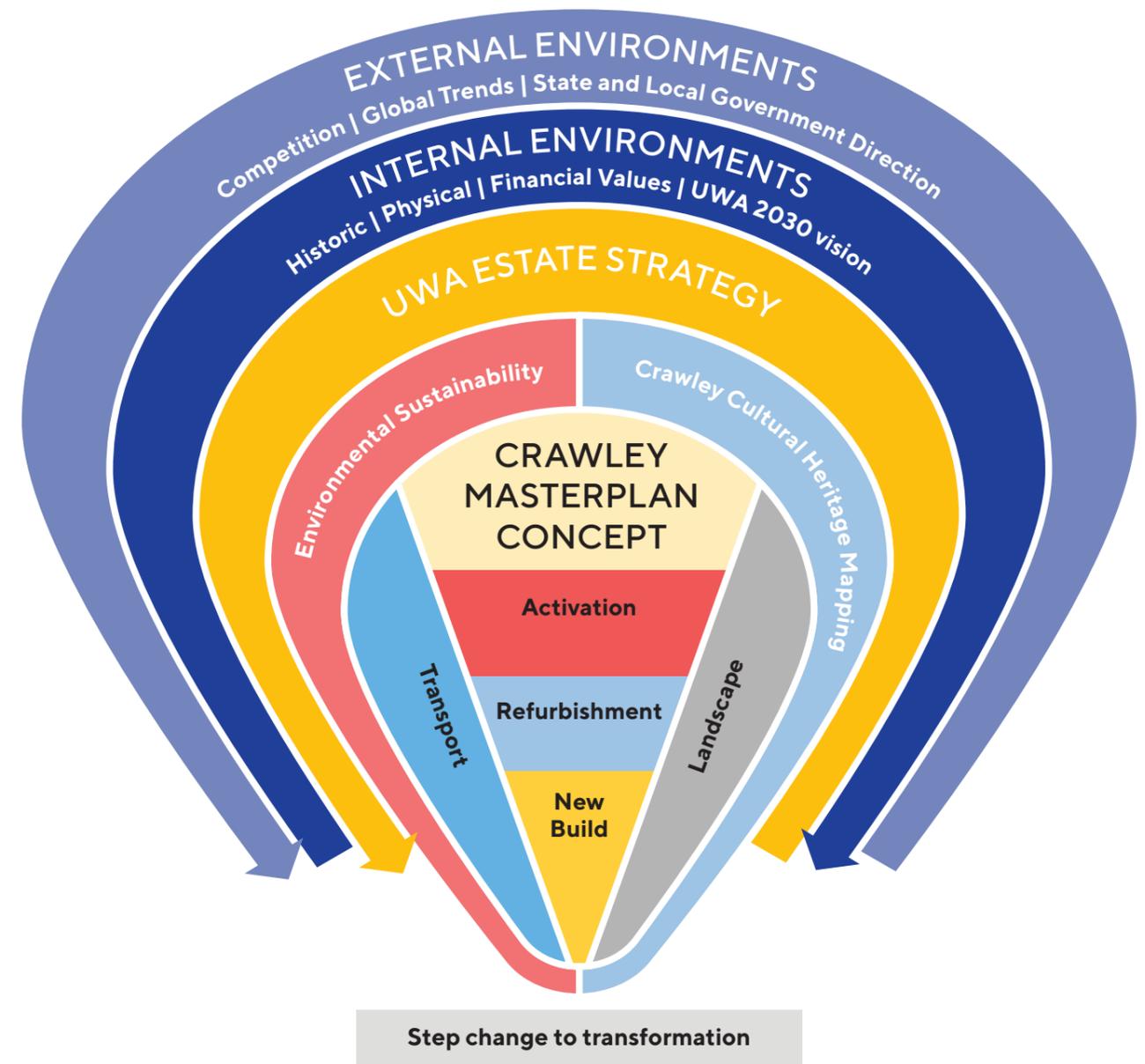


Figure 2: The Masterplan process within the context of internal and external environments

3.0 CONTEXT

3.1 Background

Since 1915 the Crawley campus has been guided by a series of decennial campus plans which have stringently governed its growth. This has helped to create an exceptional campus experience. The master planning process has determined the organisation of buildings, the structure of pedestrian movement across campus and enshrined the campus' prized outdoor spaces. Today, the Crawley campus is a symbol of the State and a major draw for students, researchers and visitors alike.

The previous 10 campus Masterplans focused almost exclusively on Crawley, whereas this document is the product of consideration of the estate in its totality. Its focus is on the campus physical context adjacent to a nature reserve and the Swan River, a deeper connection to the land and its Whadjuk Noongar significance. In addition to a more outward-looking aspect that responds to the exceptional competitiveness of the international higher education sector, the Masterplan transforms UWA's approach to managing and developing its estate. Such an approach will more readily help the University to achieve its ambitions over the next decade.

The UWA Estate Strategy was ratified by the Senate in 2018. All the interventions proposed in the Masterplan support the recommendations of the Estate Strategy and have been shaped by further engagement with students, staff and the wider community. It is this extensive process of stakeholder engagement which forms the basis of the research and recommendations in the Masterplan.

3.2 UWA Today

The University of Western Australia was established in 1911 as the State's first university. It was also the first free university in the British Empire, actively promoting equal access to tertiary education for all social classes.

More than 100 years later, the University is now home to a large number of schools and many research institutions and centres, all of which celebrated the University's Centenary in 2013. UWA also entered the internationally recognised Academic Ranking of World Universities' Top 100 listing, continuing to set the standard for other Western Australian universities to follow in terms of recognition for its multiple academic achievements nationally and internationally.

UWA 2030 establishes the University's aspirations at its outset 'Creating the next generation of global leaders through experience-rich education and world-leading, trustworthy research'.

The Masterplan provides a physical response to UWA 2030 which promises to:

- prepare our students to be globally-relevant and responsible leaders
- enable and promote trustworthy and influential research
- build just and equitable societies
- work closely with our communities to improve our environment
- recognise and value Aboriginal peoples' rights, knowledge, culture and values.

A defining characteristic of UWA 2030 is to 'embed sustainability and fair-trade principles into the developmental and operational activities of the campus'; with a key pillar of the strategy being the creation of a more clean, green and sustainable campus. UWA aims to reduce our environmental footprint by preserving the biodiversity of our grounds, preventing environmental impacts from our resource use and

preparing for climate change risks. These principles are guided by the United Nation's Sustainable Development Goals (refer www.undp.org/content/undp/en/home/sustainable-development-goals.html).

In developing the Masterplan, it has been important to understand the current composition of UWA activity and relative student and staff numbers. These activities and numbers, together with growth projections to 2025, form the basis of several proposed actions and recommendations.

COMPOSITION	STUDENT HEADCOUNT	STAFF	RESEARCH	RANKINGS
4 faculties	25,353	3,348 full-time equivalent staff	\$177,125,781 research income (2018 data)	2019 Academic Ranking of World Universities: 99th
22 schools	18,978 EFTSL*	1,973 professional staff	5,410 research publications	2019 QS World University Rankings: 86th
32 research centres	5,529 postgraduates (by coursework)	1,375 academic staff		2019 Times Higher Education World University Rankings (world-wide): 131st
2 research institutes	1,553 higher degree (by research)			Good Universities Guide 2019: 5 stars for student demand, student/teacher ratio
	11,896 undergraduates			

*Equivalent Full-time Student Load

Table 1: 2019 key statistics

3.3 UWA Student Numbers

The University has an ambitious strategy for significant student growth, building on a strong uplift in 2021 enrolments and positive results from innovative new courses, entry pathways and student support offered throughout 2020. The University takes pride in its student-centric approach and has prioritised providing its current and future students the best possible experience across all aspects of their learning journey – educational, social and campus facilities.

Underpinning these priorities, the University has recognised the requirement to invest in enhancing digital infrastructure, the campus physical environment, research and teaching facilities.



Source: Turnberry Consulting, The University of Western Australia Estate Strategy, p99; CPB Projects, University of Western Australia Space Model Baseline report p7.

Figure 3: UWA student growth strategy

3.4 UWA Estate Student Satisfaction

An effective estate is essential to support student growth. If condition, functionality and efficiency are not addressed, condition deteriorates, user experience declines, reputation suffers and growth stagnates.

Currently, the condition of UWA's physical estate is reflected in below-average scores for student satisfaction. At a national level, the Quality Indicators for Learning and Teaching (QILT) exists as a barometer of student experience, measuring Australian universities against a number of performance indicators. These categories relate to different types of space, digital infrastructure and community.

Figure 4 shows how UWA's QILT scores compare to the overall national average. Where the line representing UWA falls below the top of the histogram bar, it falls below the average in the corresponding category. UWA performs below the national average in eight out of ten categories, including those relating to buildings and infrastructure.

Extracurricular programs are organised by a number of different bodies, including the UWA Student Guild, Student Life, UWA Sport, University Club, Cultural precinct, faculties/schools, residential colleges and the Conservatorium of Music, all of which collectively represent the interests of a large and diverse community of stakeholders. However, all of these bodies have their own approach to planning, marketing and timetabling events, leading to duplication and inefficiencies in the overall program and a missed opportunity for more systematic engagement with the student community and beyond.

From a student perspective, this creates activity clashes. For the campus, it can lead to lulls or sudden concentration in activity and makes for an uneven experience. When thinking about the campus, the lack of a unified program creates a dispersed and fragmented experience, and while a breadth of activity exists, it is not being harnessed into a coherent output. Furthermore, running events in a disjointed way often leads to duplication of infrastructure.

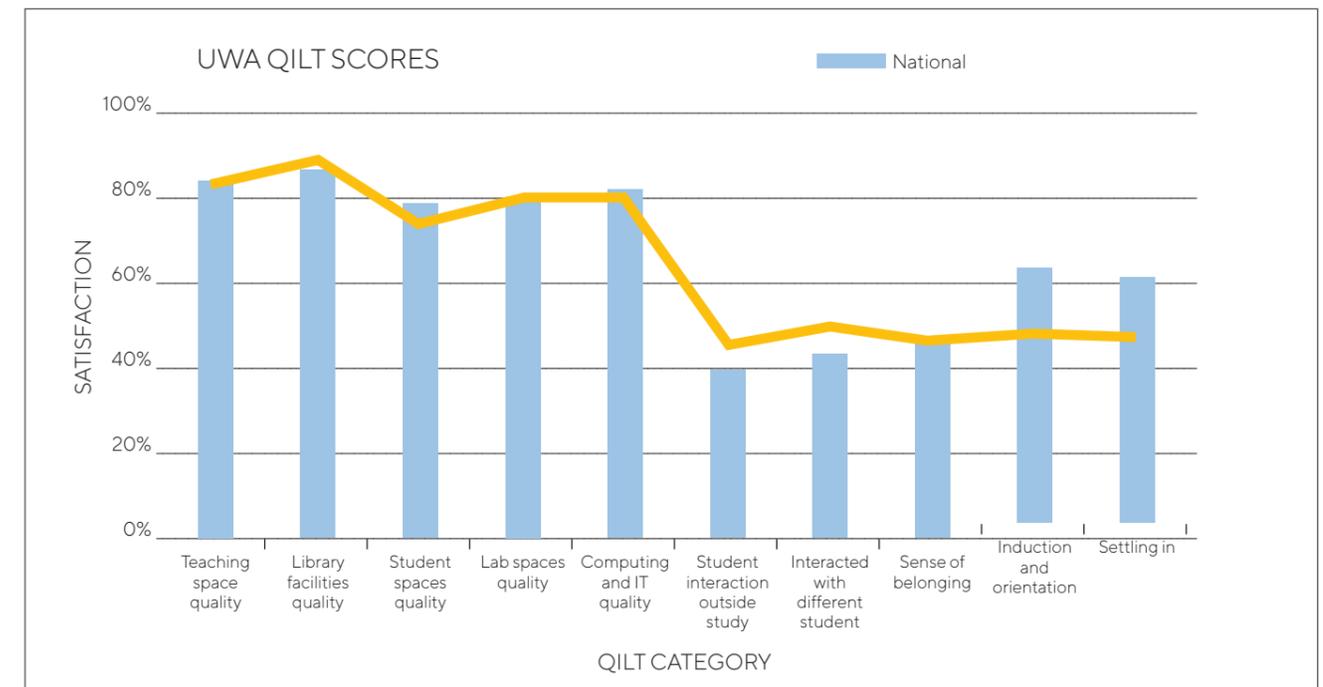


Figure 4: UWA 2018 QILT scores

3.5 UWA Estate Performance

3.5.1 Building Condition and Maintenance Spend

UWA's estate has developed over more than a century and now encompasses a portfolio of 509 buildings. Much of this footprint is on land granted to the University by the Western Australian State Government under the terms of the *University Endowment Act (1904)* or on lands purchased from the Endowment Fund, which itself has generated income from disposal of originally-bequeathed lands. In 2020, the asset replacement value (ARV) of the University's buildings was calculated, giving a figure of approximately \$2.4 billion ARV including student residential accommodation.

The majority of institutional buildings are located on the Crawley campus – the area with which UWA remains most closely associated. However, the overall estate picture is obfuscated by large landholdings, such as Shenton Park and Claremont, which house only a fraction of the University's core activity. A number of non-core land and built assets offer at best a modest return or functional benefit, and until now there has been no strategy to deal with them.

The condition of all built assets was assessed in 2018. The review demonstrated uneven space quality, utility and 'critical' remediation needs. Consequently, facilities and infrastructure do not provide a contemporary experience for students and staff.



3.5.2 The Size of the Estate

UWA has a large estate that supports a diverse range of uses and needs. Table 2 indicates the size of the estate in both Gross Floor Area (GFA) and Useable Floor Area (UFA) terms. The primary difference between the two is the space assigned for circulation, stairs, lifts, service ducts, lobbies, i.e. space that cannot be counted as part of the core use for the activities assigned to that building or facility.

Effective management of space is vital for a university and begins with understanding the nature of the use (activity) and how it is being used (utilisation) set against student and staff numbers. Furthermore, there is a need to establish, at an institutional level, control over how space is allocated and what amount of space is allocated to different activities. This is normally done through an effective Space Policy.

To support and inform the master planning process, a UWA Space Model was commissioned to establish, at both a summary level and at a detailed school / discipline level, the way in which UWA is currently using its space. The report indicated that, based upon current activity and student and staff numbers, there is a space surplus which provides an opportunity when contemplating consolidation and growth, and if harvested effectively, will reduce the University's overall footprint in relative terms.

Tertiary Education Facilities Management Association (TEFMA) benchmark data for Group of Eight (Go8) universities indicates the level of inefficiency in the UWA estate. Table 4 demonstrates that UWA is allocating the most space per Equivalent Full-Time Student Load (EFTSL) for all Go8 universities at 21.7 m². The average per EFTSL is 17.6m².

Improving space efficiency and consolidating space represents a very significant opportunity for UWA and needs very careful consideration against growth plans and the current condition of the estate. If inefficient space utilisation can be addressed, planned student growth to 2025 can be accommodated without additional capital-intensive new buildings being required. Investment in asset uplift should focus on space with the greatest student experience benefit.

ESTATE	UFAsqm	GFA sqm	COMMENTS
Total Estate (Institutional Use) TEFMA 2018	247,686	409,354	Excludes Bilya Marlee and EZONE UWA Student Hub
Claremont	7,225	11,809	Excludes East Claremont Primary School
Regionals	6,350	9,512	
UWA Research Park and UWA Sports Park, Shenton Park	20,233	27,216	
Hospitals (excluding QEIIIMC)	7,876	10,261	
Perth Metro Off Campus	4,542	9,465	
Core Teaching Estate (Crawley, QEIIIMC, Park Ave, Nedlands)	201,460	341,091	Excludes Bilya Marlee and EZONE UWA Student Hub

Table 2: Institutional space

	CURRENT POSITION	PROJECTED POSITION (2025-26)
Number of students	19,002	22,089
Total floor area of estate (sqm)*	409,354	
Modelled space budget (sqm)**	215,000	+20,000
Potential efficiencies (sqm)	-	26,300-30,000
Surplus (sqm)	-	5,000+

Source: CPB Projects, The University of Western Australia Space Model Report p.3.
 *Figure provided by CPB Projects. This figure is the gross area of the estate (all sites), including non-residential and residential, commercial and public spaces, and planned demolition.
 ** CPB Projects considered only the "Prime Campuses" of Crawley, Nedlands and QEIIIMC. Within this, some commercial, residential and public spaces were excluded from the model. This explains the differential between the total floor area of the estate and the modelled space budget.

Table 3: Space projections

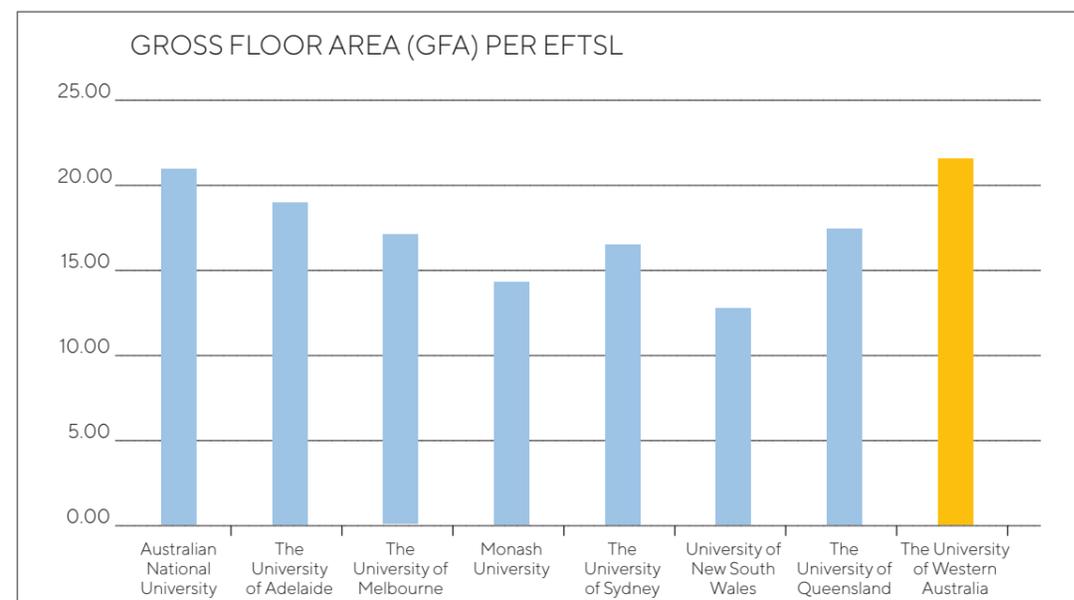


Table 4: Go8 TEFMA benchmark area/EFTSL

INSTITUTE	2018 sqm/EFTSL
Australian National University	20.91
The University of Adelaide	18.88
The University of Melbourne	17.35
Monash University	14.39
The University of Sydney	16.72
University of New South Wales	13.40
The University of Queensland	17.71
The University of Western Australia	21.65

3.5.3 Improving the Performance of the Estate – Targets and Metrics

There is a need to develop and agree to targets for the improvement in the performance of the estate; reporting on this at least annually. Several targets will be interdependent whilst some will stand alone. Importantly, targets and associated metrics need to be owned institutionally as their success is dependent on strategic decision making, particularly in terms of capital investment priority decisions. A set of high-level metrics and targets for UWA is provided below.

KPI	2025 TARGET
EFFICIENCY	
Utilisation – Area per student EFTSL (GIA m ²)	18m ²
QUALITY	
Percentage of GFA in Condition ratings 4 and 5	90%
SUSTAINABILITY	
Maintenance expenditure as percentage of ARV	1.5%
Maintenance and refurbishment expenditure as % of ARV (3-year rolling average)	>3%
Carbon emissions scope 1 and 2, tonnes by m ²	<0.08 tonnes CO ₂ -e/m ² emitted across campuses

Table 5: UWA targets and metrics

EFTSL – Equivalent Full-Time Student Load
 ARV – Asset Replacement Value
 GIA – Gross Internal Area
 GFA – Gross Floor Area

Note: Scope 1 and 2 emissions is 0.08 tonnes CO₂ given with zero target for energy (which makes up over 90% of Scope 1 and 2 emissions). The target is a building use target and our energy target will be achieved through offsetting this usage.

The data to inform these metrics is collected annually via TEFMA. There are a series of other metrics and targets that also need to be monitored and reported annually.





3.5.4 Non-core Sites

The UWA estate includes multiple properties that provide limited income, are not salient to the overall mission, nor sufficiently specialised to require their own space. The University's treatment of its non-core sites is therefore one of the major campus strategy decisions that the University must resolve.

The UWA Estate Strategy recommended divesting or developing certain landholdings and built assets, either for more practical uses or to release funds that would be better directed towards the core academic estate in support of the institutional mission. The benefit of addressing some or all of these sites is twofold. First, a smaller asset base would help to consolidate activity on core sites and rectify thin utilisation, thereby reducing ongoing maintenance and other operational costs. Second, many of these land assets are endowment owned. Evidence of poor performance is available and implementation of a plan for divestment or for generating a return from these assets is essential.

The University's core metropolitan sites are located in the Crawley QEII MC precinct. The potential value of University assets considered non-core has been assessed.

The key outcomes of the assessment were:

- UWA's property portfolio is extremely valuable and any action to extract this value should be managed with care.
- The legal, planning and environmental situation is complex; whilst certain due diligence work has been undertaken, if each site is approved for further consideration, a full advisory team would be required to support the successful delivery of the suggested values.
- There may be a long timeframe within which the best value can be realised and a fairly significant cost (including relocation of UWA activities in some cases) to enable some of the options at the different sites (refer strategic new build triggers in Section 1.0).
- The returns to the Endowment Trust and the ongoing financial benefit indicate the strategy is worth pursuing.
- A strategic approach to development opportunities, in conjunction with public and private partners, may be used to realise an asset's optimal value.



4.0 MASTERPLAN KEY DRIVERS AND OBJECTIVES

4.1 Masterplan Key Drivers

The Estate Strategy established the need for refurbishment and increased density of core sites as the key elements that UWA requires to meet its broader strategic targets. It recommended the investment in existing core facilities and reduction of the total asset base, allowing for the release of surplus assets. Selective disposals will not impact on the mission of the University. In general it would lead to significant operational advantage and the opportunity to tangibly improve and contemporise infrastructure. Ultimately, this will enable the physical campus at Crawley to maintain a leading position within global higher education.

The Masterplan will ensure the University's landholdings and built assets will be aligned to meet its strategic objectives as set out in UWA 2030 (refer Table 6).

There are a several considerations clear from the evidence:

- there is sufficient capacity in the existing estate to accommodate growth
- there is potential unbuilt capacity at Crawley and QEIIIMC to deal with UWA growth for many decades
- all evidence suggests that UWA should focus on greater density with activity focused at Crawley and QEIIIMC, other than where deemed essential.

The effort should be on refurbishment and renewal and not necessarily on the construction of new buildings. That is, to value-add to ensure fit-for-purpose facilities whilst appreciating the embodied energy of existing buildings and improved operational outcome for existing built fabric.

An enhanced estate positively improves the physical experience of students and staff, contributing directly to the increased attractiveness of UWA. There can be advances in the short-term but the real benefits of a rejuvenation program will be felt over a decade. Figure 5 outlines the key sectoral trends UWA should respond to.

	EDUCATION	RESEARCH AND INNOVATION	GLOBAL PARTNERSHIPS	SUSTAINABLE ENVIRONMENTS	PEOPLE AND CULTURE
VISION	A UWA education will empower students to create the best possible future for themselves and, through their leadership, others. We will be globally acclaimed for our stimulating curriculum built on social responsibility, experience-rich learning and cutting-edge research.	As one of the world's elite, research-intensive universities, we will be known for our trusted, reproducible, transformative, open research and accessible data. We will be recognised for leading teams in resolving real-world challenges that are critical to the planet and its people.	As an authoritative global leader in education, and cross-disciplinary and translatable research, we will forge and nurture strong, deep partnerships that reinforce our position as the fulcrum of the Indian Ocean Rim.	We will be recognised as a vibrant, sustainable and connected hub that blends our heritage with our future and welcomes our partners, the community and the wider world.	UWA will be a remarkable place to work, attracting and retaining world-class staff from diverse backgrounds who want to build careers, drive change, provide leadership and create opportunities at an institution renowned for its excellence.

Table 6: UWA 2030 pillars

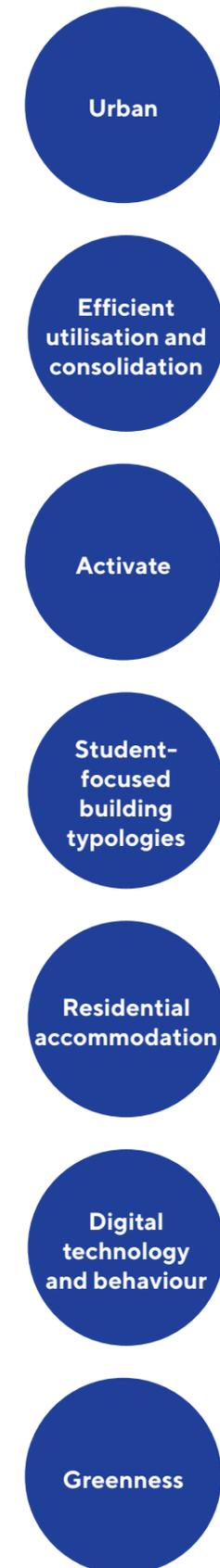


Figure 5: Key international benchmarks



The 2020 UWA Crawley Campus Masterplan is a platform to support future development decisions enabling alignment of UWA’s strategic ambition with the physical experience of the Crawley campus.

4.2 Masterplan Objectives

The aim of the Campus Planning Review 2000 was to retain the ambience, beauty and functionality of the campus and generate scope for future development.

The aim of the Campus Planning Review 2010 was to:

- ensure there is sufficient land and buildings to accommodate teaching, research and other needs over the next 10 years
- place the University to the best advantage to meet external and often unforeseeable situations over the next 50 years.

The 2020 UWA Crawley Campus Masterplan is a platform to support future development decisions enabling alignment of UWA’s strategic ambition with the physical experience of the Crawley campus. It provides a framework to support decisions driving efficiencies of cost, time and space use of the built environment. In response to its current position, UWA must set in motion a targeted program of interventions. Emerging from an extensive process of research and consultation, these interventions will be guided by the eight strategic development objectives identified in the Estate Strategy.

The overriding ambition is a physical experience that is fully aligned to UWA’s strategic ambition.

To that end, the Masterplan will ensure the University’s core campuses will:

- provide the contemporary, sustainable environment needed for high-quality teaching, research, enterprise, extra-curricular and pastoral activities
- be safe and secure whilst simultaneously open, engaging and accessible
- demonstrate a visible integration of a cultural narrative
- have infrastructure that is resilient and digitally connected
- be a hive of activity, with campus activation and building rejuvenation underpinning the ambition.

STRATEGIC DEVELOPMENT OBJECTIVES		
1	Contemporise the physical and digital campus infrastructure	Digital technology and behaviour
2	Consolidate suitable activity to the core	Efficient utilisation and consolidation
3	Reduce current asset holdings and rectify ‘thin’ utilisation	Efficient utilisation and consolidation
4	Establish new campus capabilities	Establish new campus capabilities
5	Activate the campus as a vibrant destination for students and the community	Activate
6	Build strong linkages between Crawley, QEIIIMC and the City	Build strong linkages in the Crawley precinct
7	Broaden and intensify the presence of industry, enterprise and other partners on campus	Broaden and intensify partnerships
8	Maximise the unique and culturally-significant setting alongside Matilda Bay and the Swan River	Greenness

Table 7: Strategic development objectives

4.3 Masterplan Scope

Over the years the University has expanded beyond the original campus and the 'edges' of the University are no longer distinctly defined or clearly delineated. The University has actively purchased property around the campus since the 1960s and the University developments on what was residential land have become commonplace. Developments such as the Ken and Julie Michael Building at 7 Fairway are an example of successful campus growth into the community.

The land referred to as "the campus" in this document is zoned under the Metropolitan Regional Scheme for University Purposes. It also includes adjacent areas that have either high levels of University ownership, are used for University-related purposes or may determine the planning outcomes within the campus.

4.3.1 Planning

The 2020 UWA Crawley Campus Masterplan has links to numerous other Local and State Government strategic and statutory plans. These plans include:

- The Western Australian State Government's Perth and Peel @ 3.5m and Directions 2031
- Capital City planning framework
- Metropolitan Region Scheme
- City of Perth City Planning Scheme and former Town Planning Scheme No. 4 and associated Planning Policies.

Planning has been a key feature of the growth and development of the University since its establishment in 1911, its acquisition of the Crawley land in 1914 and its permanent move to the Crawley site in 1929.

Campus development over the last decade includes the following buildings:

- Early Learning Centre (2011)
- expansion of University Hall (2013)
- Co2 Research Facility (2014)
- Indian Ocean Marine Research Centre (2016)
- expansion of St Catherine's College (2014 and 2019)
- expansion of St Thomas More (2016)
- Forrest Hall Stage 1 (2018)
- expansion of St George's College (2019)
- EZONE UWA Student Hub (2020)
- Bilya Marlee (Indigenous Studies) building (2020)

Demolition of buildings over the last decade include:

- Old Pharmacology (2019)
- portion of Civil and Mechanical Engineering (2017).

4.3.2 Heritage and Conservation

The Crawley Campus Conservation Management Plan (CCCMP) 2008 identifies all buildings, places and artworks of significance on campus at the time and is to be considered as the definitive conservation manual for the campus. The CCCMP makes recommendations for their conservation, where necessary, and indicates sensitive areas which future development should acknowledge.

The various architectural styles present on the campus have been named in the CCCMP and it is accepted that diversity, rather than uniformity, will govern the future built environment. Where possible, examples of different styles will be retained to show the evolution of the campus over the past 100 years.

Some of the University's off-campus properties have heritage significance and examples of these styles will be retained where practicable. The Nedlands Park Masonic Hall in Broadway is one example.

All buildings and landscaped areas on the campus at the time (2008) have been listed according to their heritage significance. The higher the degree of significance, the more care must be taken when alterations, extensions or refurbishments are carried out. Significance does not imply a building cannot be demolished or substantially altered. Where necessary, guidance will be sought from a consulting heritage architect, landscape historian or art historian.

Significant vistas across the campus which should be retained have also been identified. For example, distant views of the campus and Winthrop Tower, and campus engagement with the river, should be maintained and enhanced.

The focus of this Masterplan is the rejuvenation and activation of the campus and improving the campus connection to river and the community context; recognising the extant values and qualities of the estate and its ongoing preservation.

4.3.3 Physical Context

The Campus Review 2010 and previous Masterplans have a strong history of site planning and acknowledge the University's identity by the river. The scope of this Masterplan has been an even stronger acknowledgment of the social, cultural and environmental heritage of the precinct in which the campus resides, and accordingly it is anchored by a cultural awareness supporting the University's 'Learning by the river' aspiration. The east and southern edges of the campus are particularly significant to this Masterplan as they face the river and the environmentally-rich Pelican Point.



5.0 MASTERPLAN STRATEGIES

This Masterplan comprises a detailed exploration of the specific qualities of the campus precinct to identify opportunities to secure a strong, sustainable and diverse physical entity in to the future. It focuses sharply on environmental sustainability, cultural recognition, landscape and the public realm. Site planning to reflect long and short-term needs and extensive consultation with the community, students, staff, Convocation, traditional owners of the land and the Whadjuk Noongar Elders has resulted in a masterplan that will guide future decisions of development and refurbishment. It aims to contemporise, ensure adaptability as well as preserve the unique character and heritage significance of the campus environments, maintaining the integrity of the original design principles, architectural language and landscaped form of the University.

The three-pronged approach, described below and referred to in Section 2.0, places the greatest emphasis on rejuvenation, that is the repurposing of the existing built environment, and activation, to improve both space efficiency and address the backlog of maintenance. The Crawley Campus Conservation Management Plan 2008 and the 2019 Building Condition Report will guide future investment. Within the framework of the previous masterplans and the proposed development

model, the five key planning strategies are at the core of the 2020 UWA Crawley Campus Masterplan. These are:

- consolidation of activities in the heart of the campus
- maximising the physical setting adjacent to the river
- fostering partnerships
- environmental sustainability
- embracing the University heritage.

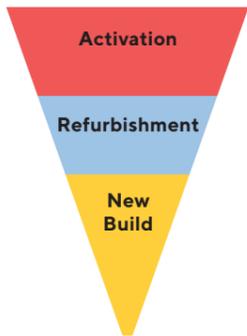
CRAWLEY MASTERPLAN CONCEPT the three pillars of development		DEVELOPMENT MODEL
	Activation	Equally significant to the rejuvenation program is stronger activation of the core campus environment through activity co-location, space consolidation and denser utilisation. The concept of a 'market place of ideas' to create an inviting and dynamic campus will be a key focus over coming years within the central precinct.
	Refurbishment	Investment is proposed for student teaching and learning environments, predominantly in the central village precinct, addressing backlog maintenance requirements.
	New Build	Strategic new builds will be relevant where demand and need cannot be met within the existing footprint and additional capacity is aligned with the University's academic vision and funding opportunities.

Table 8: Development model



UNIVERSITY OF WESTERN AUSTRALIA
10 YEAR + FUTURE VISION

- PROPOSED LANDMARK BUILDING
- EXISTING LANDMARK BUILDING
- FUTURE OPPORTUNITY
- LIBRARIES
- ACTIVATED PUBLIC REALM
- TRANSPORT INFRASTRUCTURE

udla
NEW IDEAS THROUGH
SHARED DESIGN-THINKING

ISSUE DATE: 19.12.19 | REVISION: B

Figure 6: The Masterplan Vision

5.1 Planning Strategy One - Activation and Consolidation of the Campus Heart

A key driver of the Masterplan is the need to improve the student experience on the Crawley campus. This precinct, at the heart of the campus, is as much about external

placemaking and activation as it is about internal utilisation improvement and contemporising of spaces. The plans build on the existing framework of pedestrian routes and meeting places.



Figure 7: Activation and consolidation of the campus heart

5.2 Planning Strategy Two - Maximising the Physical Setting adjacent to the Swan River

The Masterplan maximises the opportunities of the natural setting and the existing attributes of the campus to enhance intuitive wayfinding and amenity, along with student, staff and community experience. The University's eastern edge

will become more open and connected to the river foreshore with several locations adjacent to the University boundary earmarked for greater campus permeability and public realm activation.

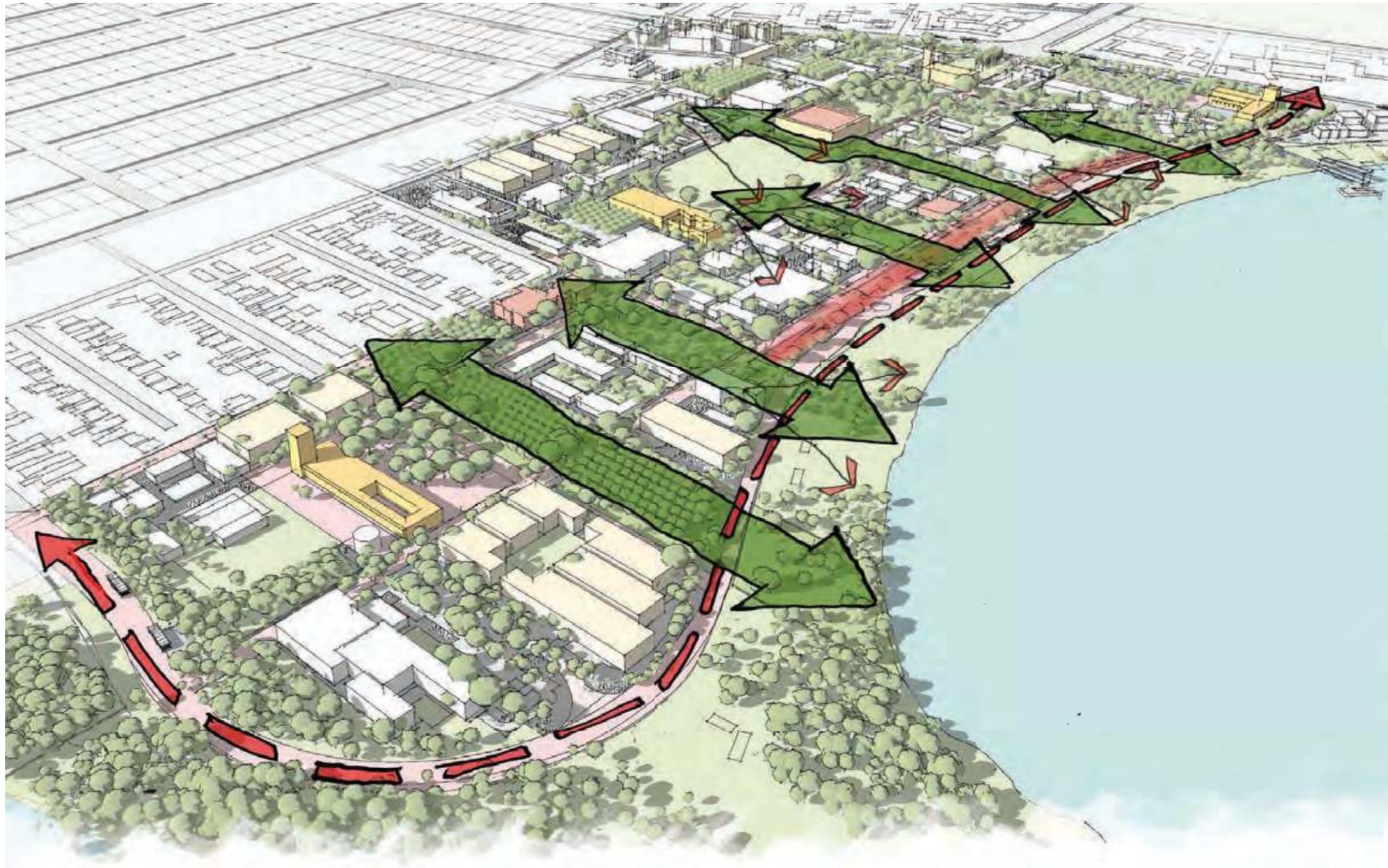


Figure 8: Maximising the physical setting adjacent to the river

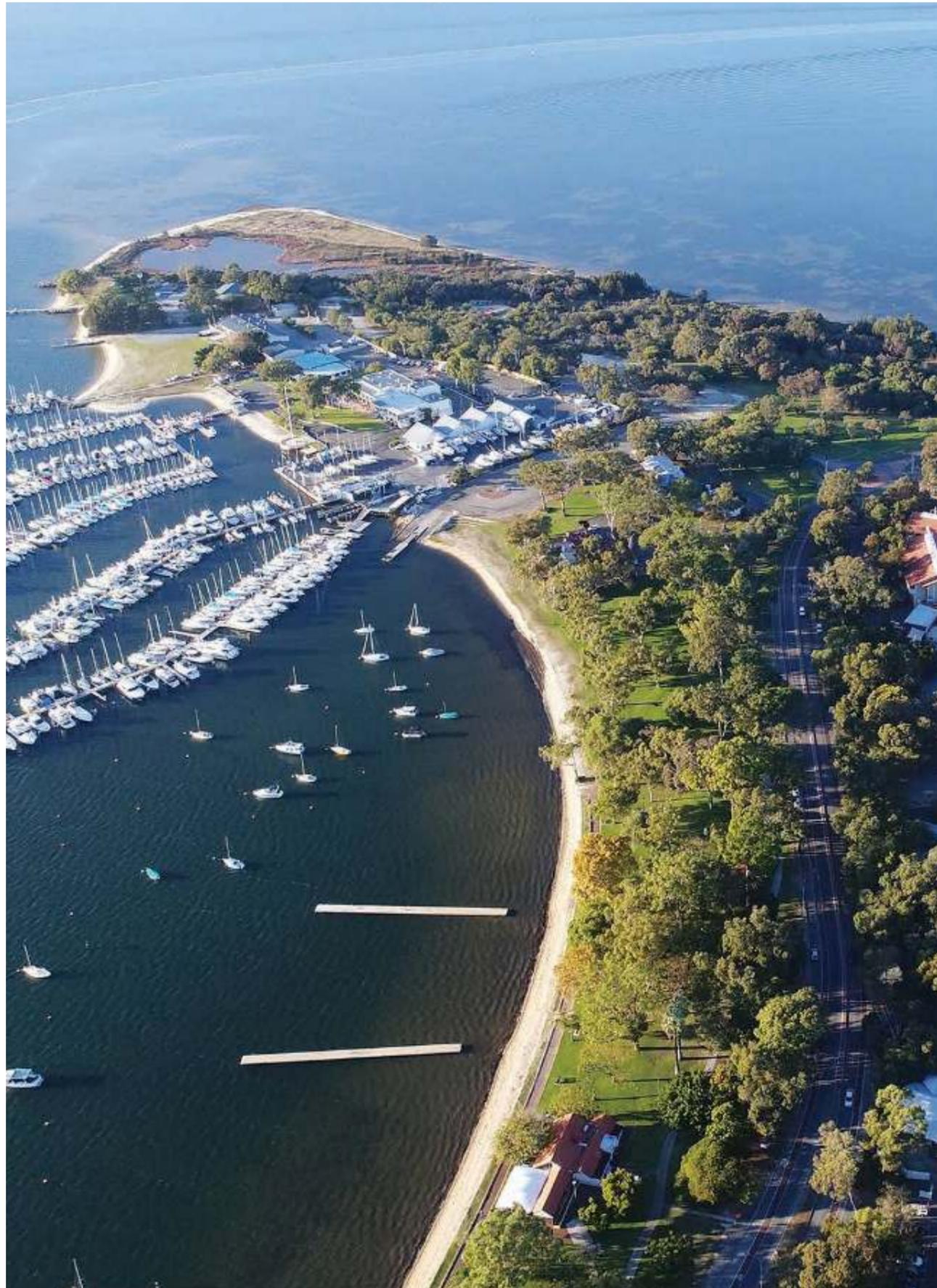
5.3 Planning Strategy Three - Fostering Partnerships

A strategic approach to increasing the number of partnerships between the University, industry and research collaborators is essential to positively impact on its competitiveness in the global higher education sector. The Masterplan promotes

strategic development opportunities along the innovation corridor linking the Crawley campus with QEIIIMC, and further south on the campus towards Pelican Point, over time.



Figure 9: Fostering partnerships between industry, research and the University



5.4 Planning Strategy Four – Embedding Sustainability Principles

The Masterplan advocates for the University to drive change towards a sustainable future for our local, regional and global societies. It recognises the intrinsic need to inculcate our sustainability values and commitments into our campus operations, particularly in relation to the climate, environment and Indigenous heritage. Our vision sets out core principles, strengthening and advancing our sustainability commitment through ambitious goals such as global recognition for leadership in public space sustainability; creating a cleaner, greener and sustainable campus.

As the Masterplan raises our awareness of the spiritual and cultural custodians of this site, the University acknowledges the values, languages, beliefs and knowledge of the Whadjuk Noongar people, which include ensuring the land, flora and fauna are valued and replenished, with focus on endemic and climate-resilient species. More so than previous masterplans, this Masterplan connects the Crawley campus to its broader context; the foreshore, Pelican Point, the nature reserve and the community. The intrinsic importance of the Aboriginal narratives and value of the campus context and setting to the Whadjuk Noongar peoples, has been explored to understand how this connection to country may be represented authentically within and around the site (refer Crawley Cultural Heritage Mapping, section 7.0).

The Masterplan proposes short, medium and long-term opportunities leading towards a sustainable transport model for the University (Transport and Mobility Strategy). Further stakeholder consultation is planned in this area.

The UWA Environmental Sustainability Strategy 2020–25 addresses our environmental challenges and provides roadmaps outlining how we intend to implement this in key areas of operational activity, including improved waste and water management, enhanced microclimates and built forms, enriched biodiversity and more sustainable environments. A key strategic and operational goal is a carbon neutral energy campus by 2025. To advance energy efficiency gains and offset all remaining carbon emissions from energy use through generation of renewable energy.

An urban forest and the gradual transformation to a green campus, thriving on native and climate-resilient species, constitute key goals in the next decade.

More so than previous masterplans, this Masterplan connects the Crawley campus to its broader context: the foreshore, Pelican Point, the nature reserve and the community.



5.5 Planning Strategy Five – Embracing the University Heritage

The Masterplan has a deep understanding of the intrinsic visual and social quality of the Crawley campus. The campus identity is a timeless and homogenous ensemble, with buildings guided by a strict design code situated within a diverse and well established landscape creating a verdant backdrop to the campus experience. The setting on the Swan River for learning and socialising is enhanced by the planting and sequential open spaces across the campus. These landscaped spaces, cloistered courtyards, colonnades, gardens, vistas and promenades support the inspired experience of the campus and have helped establish the prominent role the University plays in the cultural and intellectual life of the community.

The 2010 Campus Plan correctly signalled that ‘heritage significance’ does not necessarily mean that a building cannot be demolished or altered, but rather that other development of greater significance might take its place. In terms of built form, the Plan also stated that new proposed buildings should be timeless, avoid passing fashions and acknowledge the existing material palette. The future challenge is seeing these principles correctly translated into the materiality of new buildings which achieve individual contemporary merit in their contribution to the success of the whole campus. In order to achieve this goal, additional guidance documents such as design codes or design guidelines will be produced.

Such a carefully managed estate is a rare thing, and long range planning needs to continue to ensure this exceptional character is retained. The style and materiality of the individual buildings, their morphology, and the landscape setting should be the exemplar for future campus development, site planning and architecture. Refurbishments and repurposing projects and new builds should follow strict design principles based on the established palette of materials, texture and building typologies to preserve and enhance the existing character. Inter-connections of outdoor spaces with the buildings will be furthered by opening up some of the buildings on the ground floor, particularly in the central area and libraries to provide improved landscaped connections across the campus.

The site planning and layout of the campus is quite formal, and sensitive development, specifically around the perimeter and in the south, is required to maintain the hierarchical and garden character. Emphasis will be on a more porous edge to allow permeability, visual and physical, to the campus with more community engagement and civic spaces as entries in to the campus. Similarly, an openness to the river foreshore along the east will create a stronger public realm along all of Matilda Bay.



6.0 MASTERPLAN

The Crawley campus could be considered similar to that of a small town, with a unique set of characteristics which is evolving to develop and promote the most contemporary student-focused activities for research, learning and leisure; a place that attracts a high degree of campus occupation.

The Masterplan provides a framework for the University's planned growth in response to UWA 2030, and supports responsible and accountable development initiatives across the Crawley precinct. A place-based, scholarly and community approach to development themes across campus quarters (refer Figure 10) has been taken to maintain and improve certain benefits of co-locations and consolidation. Previous masterplans have taken a similar precinct approach.

The Masterplan structures the campus into four quarters with seamless boundaries and interconnecting thoroughfares; each with distinct characteristics. The structural layout of the campus, established and reinforced by previous masterplans, is respected and enhanced to maximise opportunities of co-location for similar functions and assist in intuitive wayfinding. The Masterplan quarters' approach encourages the legibility of the entire campus as a place of learning by the river.

UWA 2030 states:

We will be recognised as a vibrant, sustainable and connected hub that blends our heritage with our future and welcomes our partners, the community and the wider world.

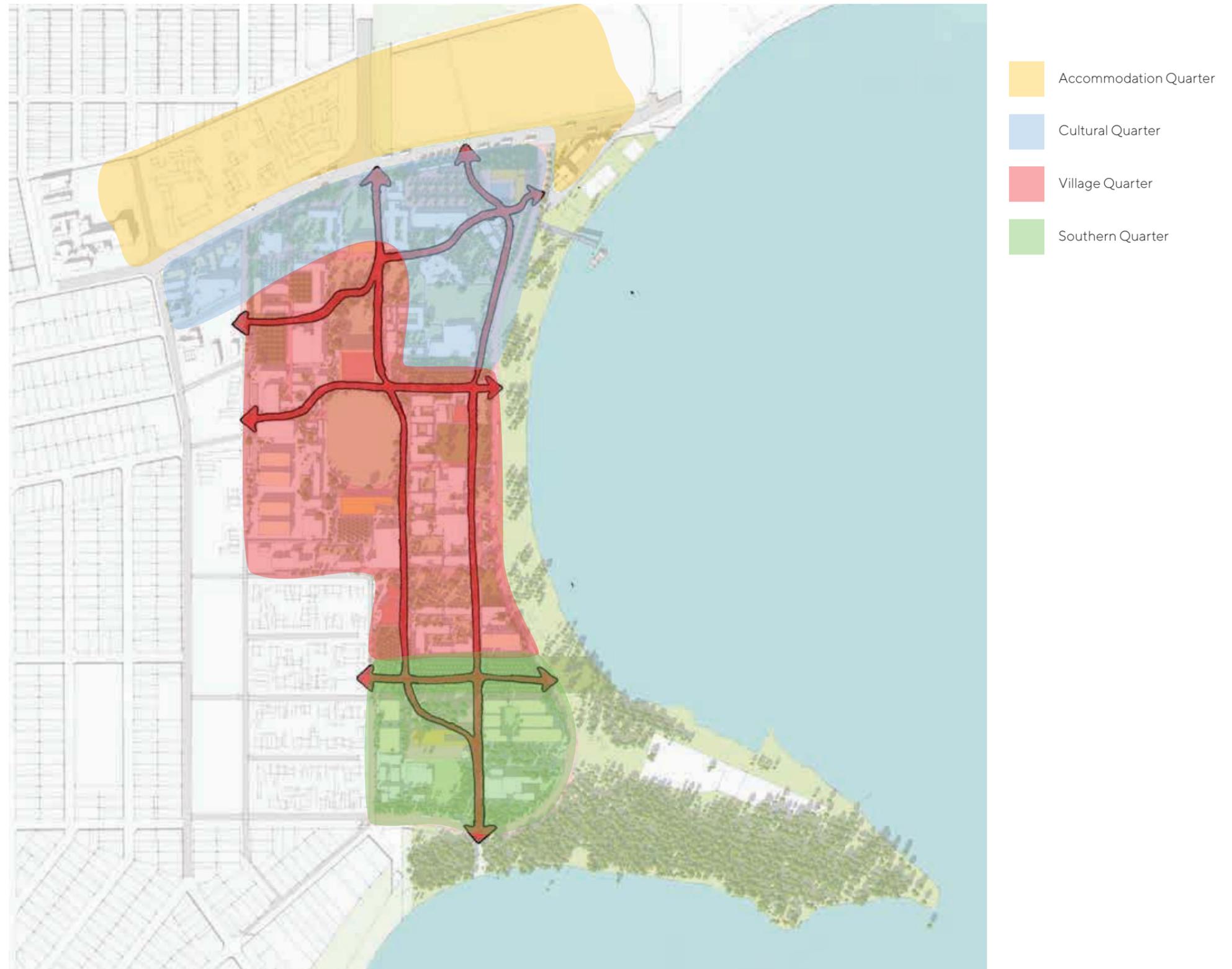


Figure 10: The Masterplan

6.1 The Village Quarter

Key Characteristics

This Quarter is the physical heart of the Crawley campus accommodating a large portion of the campus teaching and learning facilities and student activity, particularly in and around Guild Village. The Reid Library is the central hub of this Quarter, with the large open spaces of James Oval and the Great Court either side. It includes the very active North South pedestrian thoroughfares, and has the front row position hugging the curve of Matilda Bay Foreshore. The existing landscape is very established in some sections of this Quarter with imported trees complimenting the dominant native landscape.

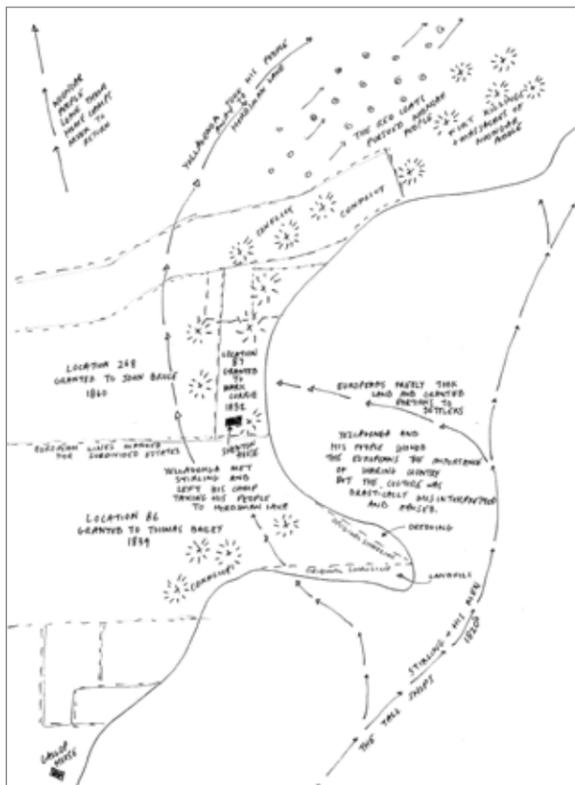
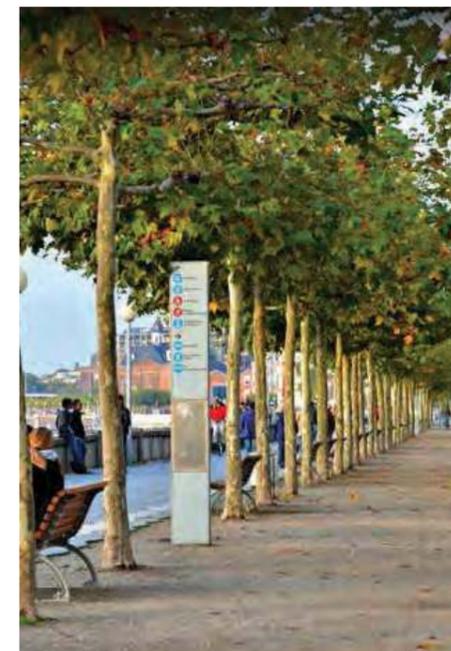


Figure 12: Sharing. One of the Key Cultural Mapping Themes of campus

The front row position hugging the curve of Matilda Bay Foreshore



Figure 11: The Village Quarter



The Vision

UWA/River foreshore learning precinct

This Quarter is envisioned as a primary student destination. Through the strategic enhancement and planning of the riverside landscape setting, a more sustainable, community-orientated and culturally-meaningful riverside experience will be created. Contemporised learning facilities and a proposed student hub will provide increased opportunities for student focused learning and social activities in formal and informal learning, social and recreational spaces.

Student-focused building typologies

Efficient utilisation and consolidation

Digital technology and behaviour

Urban

Activate

Greenness

Key Theme

Create greater density and diversity to accommodate the next decade of student growth

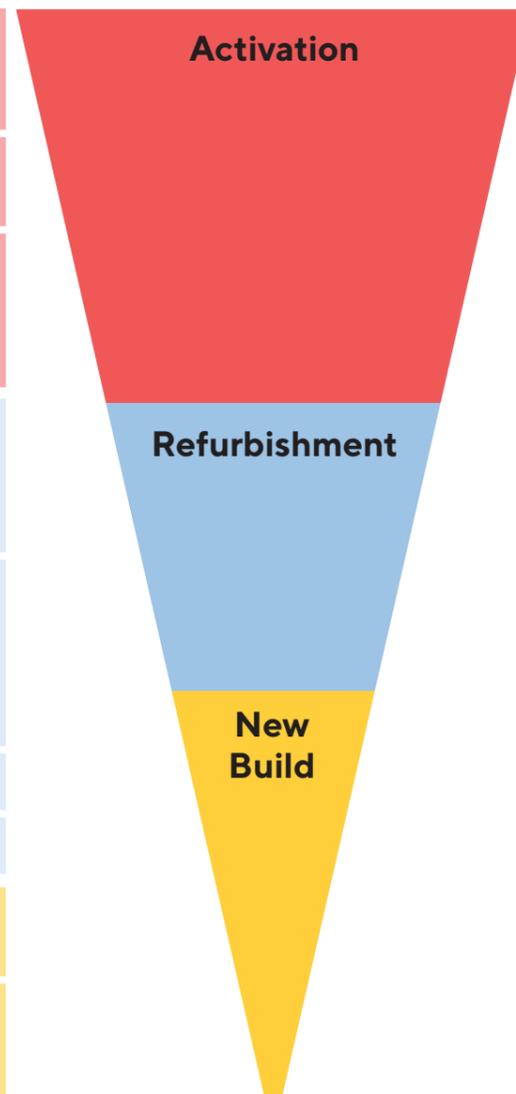
Rejuvenation and repurposing the existing built fabric is a key priority in this Quarter and aims to drive greater efficiency in space utilisation and consolidate academic activity. In alignment with the University provision of landscaped spaces and intimate courtyards and cloisters, landscape conservation and new landscape developments will occur side by side with building refurbishments to maximise the unique and culturally significant setting along Matilda Bay.



Figure 13: Active pathways through this learning precinct

Step changes

1.	Incremental establishment of the UWA River Precinct. Increased permeability along eastern edge with the focus on the community interface and foreshore connection.
2.	Invigorate campus along main thoroughfares through 'The Market Place of Ideas' - Activation Strategy.
3.	Improve the student experience and participation with the river foreshore by establishing intuitive wayfinding across this precinct, including activation nodes at key pathway intersections and placemaking and arrival points along campus edge.
1.	This Quarter can accommodate the next decade of student growth, including the possible establishment of UWA College on campus, bringing academic activities together in greater density and diversity.
2.	The Masterplan prioritises rejuvenation and repurposing of existing buildings in the Quarter; addressing backlog maintenance, compliance and amenity, as well as contemporising the teaching, learning and research environments.
3.	Relocate other activities to this Quarter.
4.	Develop short stay accommodation (underway).
1.	Create contemporary teaching, learning and recreational facilities for student-focused activities.
2.	Develop Cultural Collections facility including the Berndt and Cruthers (option); refer 2018 School of Design Student competition.



Projects

1.	The Masterplan proposes a new East-West connection, Bilya Biddi, extending from Fairway through EZONE, along the northern edge of James Oval, across Saw Promenade and north of the Law Building to Hackett Drive, and eventually the Swan River. The crossroad of Bilya Biddi and Saw Promenade, notionally Reid Square, could become a significant activation node. Future extension to a civic space to create a formal riverside entry in to campus.
2.	Revitalising and extending the existing path along the eastern edge of campus through this Quarter, a river boulevard, notionally Briana Biddi, the extension of Oak Lawn and rationalisation of the ring road along this edge are critical to creating a sense of 'learning by the river'.
3.	Activation Strategy focuses on creating a 'market place of ideas' along Saw Promenade and through to Oak Lawn. Staged implementation. Future proposal to extend Oak Lawn towards Matilda Bay and provide active river frontage.
4.	Traffic control improvements, with pedestrian priority along Hackett Drive and adjacent to the campus edge between University Club and Oak Lawn, will support a stronger river connection and the Noongar peoples narratives of the campus.
1.	Populate precinct south from Reid Library/Physics to Bilya Marlee, Barry J. Marshall and Agricultural Sciences Buildings.
2.	Renewal of key spaces in and around Law, Oak Lawn, Social Sciences and Student Central. Creating greater permeability through the ground floor plane and connections to external spaces facing the river. Refer Strategic Design Drawing to demonstrate ground floor permeability between Saw Promenade and Oak Lawn and the Oak Lawn extension towards Matilda Bay.
3.	Focus on generating activity hubs - formal and informal learning, retail, end-of-trip facilities, carpooling and bike share facilities, etc.
4.	Allow for around 50 per cent renewal and/or replacement of learning spaces across portfolio to 2030.
5.	Accommodate decant from Claremont and Nedlands sites, including UWA College and Centre for English Language Teaching.
1.	Create contemporary teaching, learning and recreational facilities landmark building south of James Oval.
2.	New building for University Collections adjacent Reid Square or within landmark contemporary learning facilities building (noted above).



Figure 14: Permeability through the ground floor plane to maximise the opportunities of activation and collaborative learning in the landscape setting



Figure 15: Saw Promenade connection to Oak Lawn

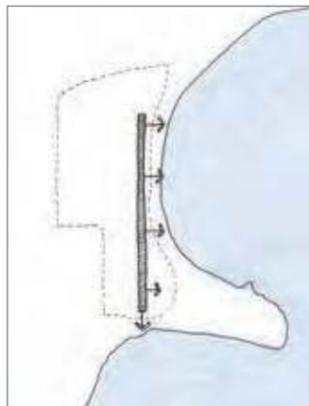


Figure 16: Briana Bididi (The Banksia Walk)



Figure 17: Extension of Oak Lawn towards Matilda Bay

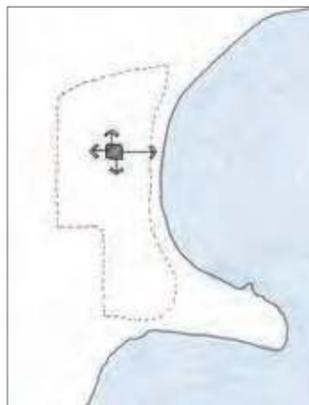


Figure 18: Reid Square

Key Projects

Library Refurbishment program – Beasley, Barry J. Marshall and Reid

The Village Quarter contains the three libraries of the Crawley campus connected by the Saw Promenade spine and their adjacent landscape settings. It is proposed that as a priority these buildings will be revitalised and create collaborative, quiet and private study space for students, some of which open at ground-floor level to activate adjacent external spaces.

Aboriginal Narratives of the campus

Landscape projects to improve the connection with the river foreshore will support the awareness of the cultural and historical significance of the University. In the medium to long-term the Masterplan proposes a large tree-lined civic place for seasonal festivals on a podium extending from Reid Square to Hackett Drive; a raised podium which conceals the on-grade car parking below. Through this intervention, the campus eastern gateway is formalised providing a public entrance to the heart of the campus, the Village Quarter, the Reid Library and the University Club.

The Masterplan encourages placemaking along the eastern edge of the campus and in the long term a public river boulevard along the riverside boundary of the campus will resume the ring road for pedestrian and active transport modes in a tree setting. Demonstration of the benefits of the Swan River connections will position the University in future discussions with the State Government and City of Perth regarding river and road reserves. This will increase the permeability in the Quarter through the University eastern or rivers edge portion, and access along Briana Bididi south through to Bilya Marlee (refer Section 7.0).

This Quarter could see the most significant transformation over the next five years.



Figure 19: Concept plan

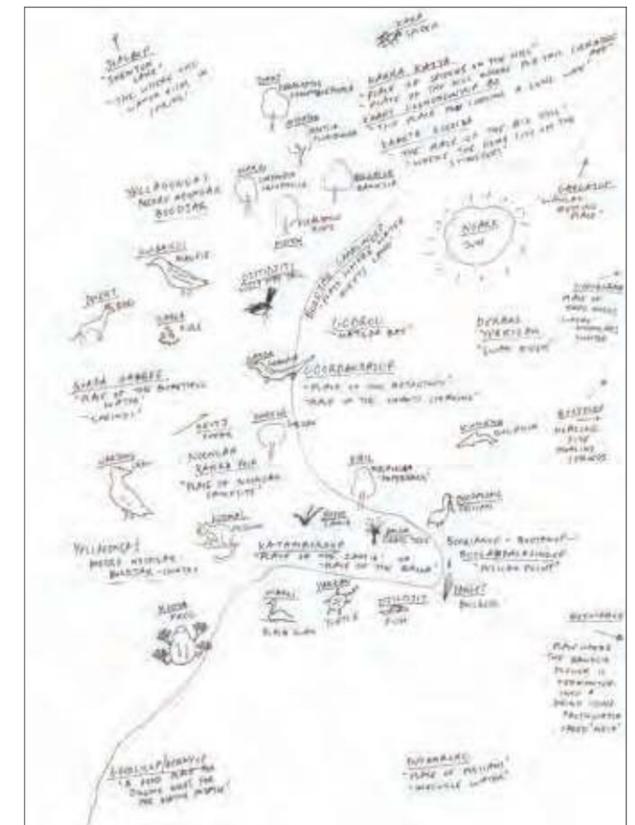


Figure 20: Language – One of the Key Cultural Mapping Themes of campus



Figure 21: Strengthening of Saw Promenade

6.2 The Cultural Quarter

Key Characteristics

This Quarter is the civic and ceremonial heart of campus, including original entry and the horseshoe circulation space around Winthrop and Hackett halls. It contains some of the most beautiful landscape places on campus, such as Whitfeld Court, the Sunken Garden and the Somerville Auditorium. These very human-scaled landscaped places support the extensive cultural and community engagement undertaken by the University. Considerable planning over time has enhanced its visual and symbolic identity, manifesting the University in the parkland concept.

The crossroads of the parkland setting with Kings Park's native gardens and the landscape of the river foreshore



Figure 22: The Cultural Quarter



Figure 23: Early site planning of campus



Figure 24: Connection. One of the Key Cultural Mapping Themes of campus



Figure 25: Ceremony + Meeting Place. One of the Key Cultural Mapping Themes of campus

The Vision

A community destination

This Quarter is envisioned as the public gateway into the University River precinct, an integration of the established parkland setting, the foreshore landscape and Kings Park. It is a public realm precinct, providing visitors access to a unique Western Australian experience – the fusion of culture, nature and learning.

Urban

Digital technology and behaviour

Efficient utilisation and consolidation

Establish new campus capabilities

Activate

Greenness

Key Theme

Culture and connection

The civic and cultural nature of this Quarter shall be respected and enhanced through conservation, preservation and adaptation of both the campus structure and the built fabric. Incremental interventions to bring a contemporary functionality to the Quarter to ensure it maintains its high cultural profile.



Figure 26: Whitfeld Court and Winthrop Hall

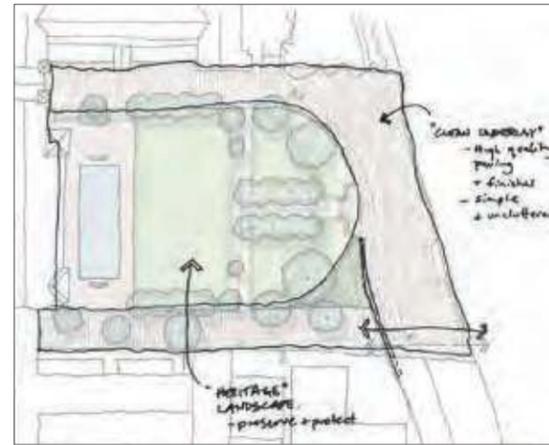


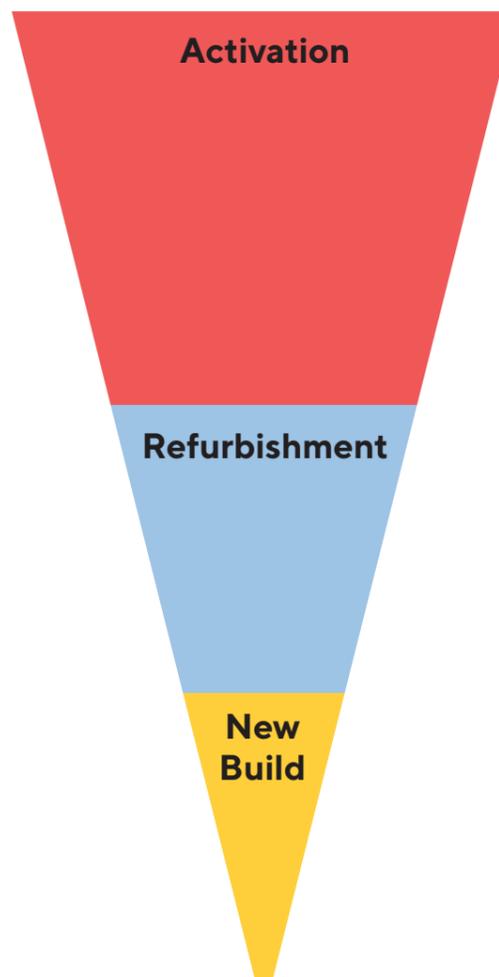
Figure 27: Permeability into campus at Whitfeld Court



Figure 28: The Sunken Garden

Step changes

1. Establish strong links with the Cultural Heritage Mapping outcomes, connection to Kings Park, and the river.
 2. Reinforce the cultural and community nature of this Quarter by investing in the existing cultural collections and community theatres, and reinforcing the art and performance spaces in the landscape.
 3. Invigorate the campus along main thoroughfares through 'The Market Place of Ideas' – Activation Strategy.
 4. Maximise the proximity and landscape connecting to Kings Park, as both a tourism destination and a native garden
 5. Traffic control improvements with pedestrian priority along Hackett Drive, adjacent to the campus edge to support a stronger river connection.
1. Consolidate public presentation and performance venues in northern precinct.
 2. The Masterplan prioritises rejuvenation and repurposing of existing buildings in the Quarter; addressing backlog maintenance, compliance and amenity.
 3. Relocate complimentary activities to this Quarter, e.g. Perth Festival.
 4. Develop short stay accommodation (underway).
1. Consideration of a public transport destination.
 2. Future development site for a potential landmark building.
 3. Cultural collections including the Berndt, Cruthers, Music Conservatorium.



Projects

1. Incrementally define the proposed UWA River Precinct at the northern end of Hackett Drive with Mounts Bay Road. The addition of Forrest Hall in this Quarter provides the opportunity to reinforce the north-east entry point into the University. The first steps would include raised brick paving to the road for a section of Hackett Drive and the introduction of trees in the median strips and road verges.
 2. Incremental replacement of the on-campus ring road at the Hackett Drive and Mounts Bay Road edges and in front of Lawrence Wilson Art Gallery to allow for a more permeable, pedestrian-friendly interface to the campus edge along the Mounts Bay Road/Stirling Highway edge.
 3. Activation Strategy focuses on creating a 'market place of ideas' along Saw Promenade.
 4. Resolution of the cycle connections through to Kings Park and the river will be a coordinated, incremental approach with the City of Perth to improve amenity and integrate with the links to the Fremantle, Perth and local train stations.
 5. Conserve primary green and public spaces including Whitfeld Court, Somerville Auditorium and the Sunken Garden.
1. Preserved European-style buildings and the original site planning associated with the concept of a 'park with buildings'. Realise the original vision for Hackett Hall by adding the second storey to a portion of the building.
 2. Ensure the existing buildings in this Quarter have universal access, efficient operations and improved passive design strategies, e.g. improved external micro climates.
 3. Development initiatives near the Conservatorium of Music and Recreation Centre at the Mounts Bay Road and Hackett Drive edges include creating a public precinct and visible entry to the University.
1. Opportunity for an integrated transport hub.
 2. Opportunity for a landmark building at the Hackett Drive Mounts Bay Road edge of the campus.



Key Projects

Permeable campus edge

A new permeability along Mounts Bay Road and Hackett Drive.

Landmark civic space at the Hackett Drive and Mounts Bay Road edges

In the long-term a new build can be accommodated to support the civic/cultural characteristics of this Quarter and provide a strong north-east campus landmark, reinforcing the gateway to UWA. The Quarter could accommodate the Berndt Museum and other University collections, providing increased exhibition and storage facilities. As the Estate Strategy identified, there is a global trend to reactivate collections, redefining their future role in higher education.

The Masterplan, therefore, supports the consideration of a new building for this purpose to maximise the potential to transform UWA into a regional leader utilising its collections in teaching, learning and research, globally. The proximity of such a new building to the existing theatres could enhance this location, creating a significant public-facing venue for the University capable of accommodating multiple uses and events. A Banksia Grove is proposed in this location, linking with the endemic planting of Kings Park and the proposed boulevard along the campus river, Briana Bididi (refer Figure 29).

The location of sports and recreation infrastructure displaced through development will be influenced by its proximity to concentrated student activity in the Village Quarter and College Row and supporting activity, eg. cafes, end-of-trip facilities.

Public transport destination

The Masterplan supports the future provision of a mass rapid transport system (MRT), running past QEII MC along Thomas Street/Winthrop Avenue. This would provide the opportunity for a transit station on campus near the Mounts Bay Road and Hackett Drive intersection. The vision takes the MRT under Stirling Highway and creates a major transport hub adjacent to the proposed landmark building, with water transport links from a UWA Matilda Bay Ferry Station, adjacent to this hub, to the south of Perth and Perth City.



Figure 29: The Mass Rapid Transport Hub adjacent to landmark building, Matilda Bay Ferry Station and UWA bus port



Figure 30: New edge treatment in front of Lawrence Wilson Art Gallery

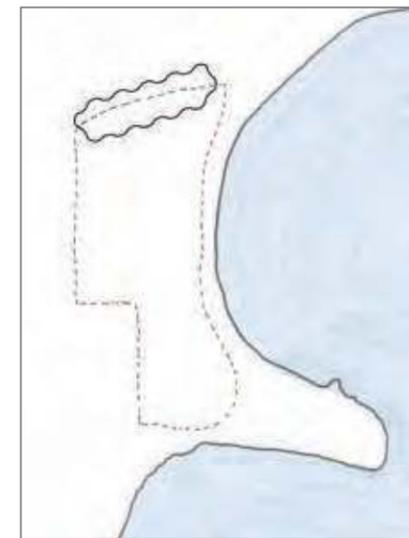


Figure 31: Improved permeability along the Stirling Highway frontage



Figure 32: Strengthening the entries into campus from Stirling Highway

6.3 The Southern Quarter

Key Characteristics

Hackett Drive disrupts the physical and visual connection of this Quarter with the river, both to the east and south. Originally quite swampy wetland area close to Pelican Point Reserve, it contains some of the oldest remnant Indigenous trees on campus.

Pedestrian paths from the north of campus extend into this quarter but deteriorate significantly.

Crawley Village lies immediately adjacent to the Quarter with a number of consolidated sites providing development and asset value release opportunity for the University. The higher density residential zoning planned by the City of Perth in this precinct will increase the activation of the campus edge supporting increased demand for services and retail of which the Quarter should leverage.



The Southern Quarter of the campus has close proximity to Pelican Point, the environmental reserve and river foreshore



Figure 33: The Southern Quarter – developing structure

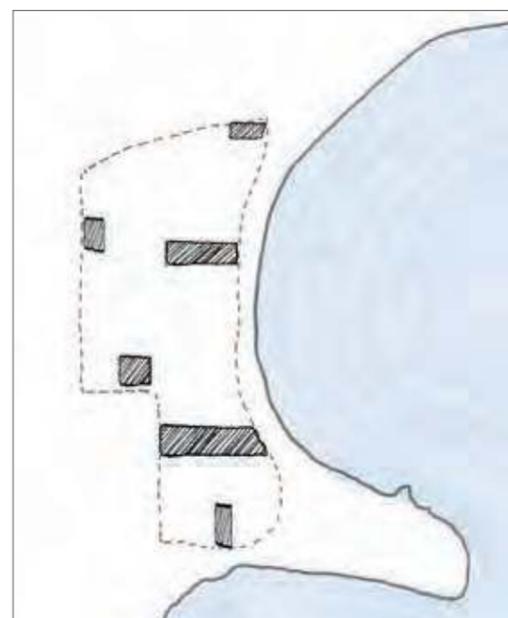


Figure 34: Tree Grove allocation across campus

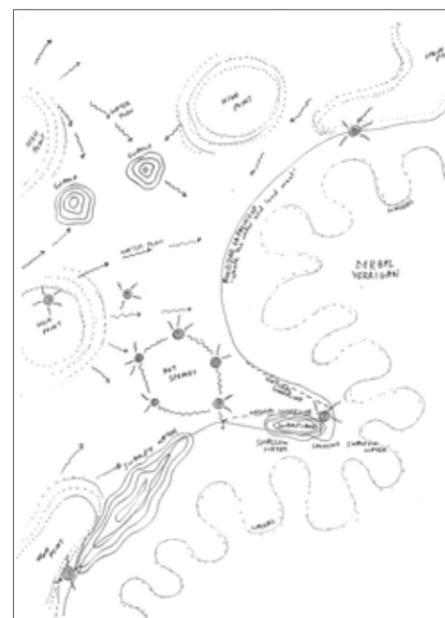


Figure 35: Water. One of the Key Cultural Mapping Themes of campus

The Vision

A place-inspired Quarter over the long term

As a Place, it has the potential to become a 'destination of the future', provide long-term development and expansion opportunities for the UWA Crawley campus and facilitate partnership potential

Broaden and intensify partnerships

Efficient utilisation and consolidation

Digital technology and behaviour

Establish new campus capabilities

Activate

Greenness

Key Theme

Improving the identity of the Southern/Pelican Point entry in to campus

Strategic development of this Quarter will define and reinforce its Whadjuk Noongar peoples' significance and maximise opportunities arising from its proximity to Pelican Point, the environment reserve and river foreshore. This would facilitate improvement to the public realm, general activity in the campus area and ensure the prolific diversity of the campus.



Figure 36: The Southern Precinct in relation to natural setting

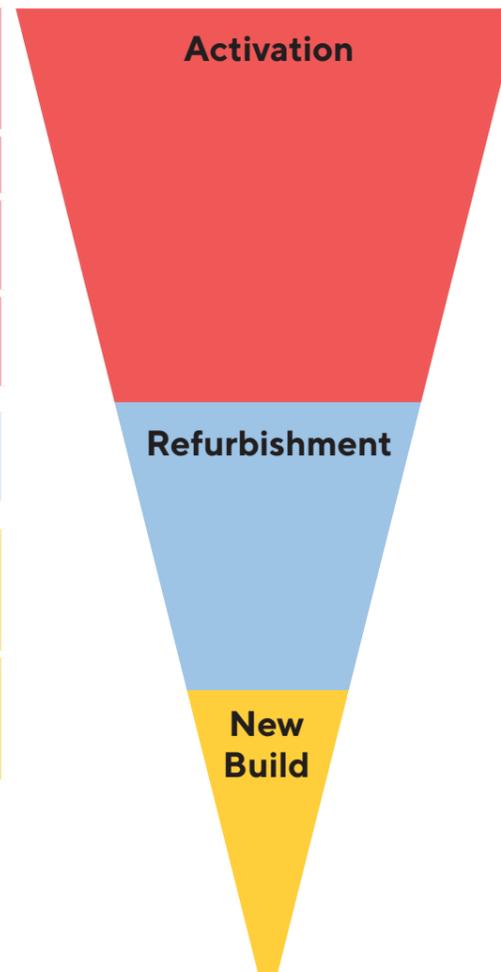


Figure 37: Development corridors for the University's external partnerships



Step changes

- | | |
|----|--|
| 1. | Incremental establishment of the UWA River Precinct. Increased permeability along the eastern and southern edges with the focus on the community interface and foreshore connection. |
| 2. | Establish key connections and meeting places. |
| 3. | Improve the structure of the Quarter by introducing a hierarchy of paths and places, especially between the Business School and Village Quarter. |
| 4. | Increase tree canopy and encourage greater biodiversity through water-sensitive urban design. |
| 1. | Rejuvenate the structured landscape and improve on the robust environmental biodiversity in the Quarter. |
| 1. | This Quarter can accommodate expansion of strategic external partnerships and other University associated activities. For example the Berndt Collection. |
| 2. | This Quarter could accommodate future student accommodation (including the relocation of UWA College) with adjacencies to Crawley Village and the river. |



Projects

- | | |
|----|---|
| 1. | Establish Six Seasons Walk. |
| 2. | Establish major tree grove. |
| 3. | Extend the Briana Biddi to create a riverside walk from the southern end of campus to the north with a future link to Kings Park and Botanic Garden. |
| 1. | Incrementally relocate student-focused activities to the Village Quarter, where an increase in contemporary teaching and learning facilities are required. |
| 2. | Consolidate and contemporise research facilities, with an increased focus on research and industry collaboration. |
| 3. | Dispose of surplus buildings at the end of their useful life, e.g. BSAU. |
| 1. | Landmark building housing new activity on the campus. New activity such as research/industry collaboration, UWA College with student-specific accommodation, along with health and wellbeing facilities supporting the campus, Crawley Village and the surrounding community. |

This Quarter should maximise its environmental and biodiversity potential by better integrating with Pelican Point and the river foreshore.

Key Projects

This portion of the campus should be poised to take up any opportunities that may arise. At this stage sport and recreation related activities have been considered, as well as a wellbeing, health and sports science facility.

Tree Grove

The primary east-west movement through this precinct is combined with a very large tree grove proposed to connect the river, campus and Crawley Village through to Broadway Shopping Centre. A future landmark building north of the Exercise Science Outdoor Lab and west of the Business School would provide structure to this planning outcome. A Pelican Point gateway to the UWA precinct is proposed to mirror the treatment of Hackett Drive at the Cultural Quarter to assist in improving the environmental continuity between the campus, Pelican Point and the wetlands.

Campus Streets and Paths

Recognising the complex issues at play in this part of the campus, particularly the perceived and real distance between the Business School and the core of campus or Village Quarter, the Masterplan identifies a step change towards a more structured and consolidated pathway from the Southern Gateway to the heart of campus.

The Six Seasons Walk brings you into the campus from a new Southern or Pelican Point entry. Briana Biddi, the public boulevard, runs along the eastern boundary to the Banksia (Briana) Grove at the north-eastern edge of the campus and has the potential to continue across Mounts Bay Road to Kings Park.



Figure 38: The Southern Quarter – A destination of the future



Figure 39: Abundance – One of the Key Cultural Mapping Themes of campus



6.4 The Accommodation Quarter

Key Characteristics

The Accommodation Quarter is located at the northern edge of the Crawley precinct, adjacent to Mounts Bay Road and Stirling Highway and bisected by Winthrop Avenue. This Quarter comprises University Hall, Forrest Hall and the Park Avenue site, with all of these sites owned by the University. However, the residential colleges are also in this Quarter, and whilst the University does not manage the colleges, it does have a role in approving development on these sites and encouraging the best use of the land.

The Quarter borders the east, west and northern approaches to the Crawley campus and should play a significant role in reinforcing the sense of arrival into the Crawley QEIMC precinct. Architectural and landscape themes would tie the Accommodation Quarter to the Crawley campus.

At the east or river end of the Quarter is the Park Avenue site that accommodates Podiatric Medicine and Surgery, Health Professions Unit and Perth Festival. The Park Avenue Main Building is important as the first permanent building constructed specifically for the University in 1923-25 and is listed on the State Register of Heritage Places. The site is isolated from Crawley campus academic activity, and due to its topography and difficult access across Mounts Bay Road, it is seen as peripheral to future planning. The site is to be considered for development supporting planned increased activity in the Crawley QEIMC precinct, with current activity to be located closer to associated academic activity.

The State Government's paper *Directions 2031 and Beyond* calls for increased residential accommodation in the area. The Accommodation Quarter has experienced significant development over the 2010-20 period, with more than 1,000 beds being added to the precinct, distributed across St Catherine's, University Hall, St Thomas More, St George's College and Forrest Hall.

The Masterplan envisions preserving and enhancing the student community use of this Quarter, reinforcing buildings within a park with greater connectivity and active recreation.

Bisecting the UWA QEIMC precinct, this high-density student accommodation precinct offers global connectivity and networks, along with social and sporting-focused activities

FACILITY	OPERATOR	BEDS
UNIVERSITY OWNED		
University Hall	UWA Accommodation Services	759
Crawley Village*	UWA Accommodation Services	417 (220 properties)
Forrest Hall**	UWA Accommodation Services	52 (45 rooms)
UNIVERSITY AFFILIATED		
St Thomas More College	St Thomas More College	400
St Catherine's College	St Catherine's College	440
Trinity Residential College	Trinity College	350
St George's College	St George's College	270
TOTAL BEDS		2,688

* Not all beds are occupied by UWA students as the accommodation caters to PhD students, other postgraduates and their families.

** Some accommodation units are two-bed. Forrest Hall can accommodate 45 students and their families.

Table 9: Student Accommodation

The Vision

A Living Quarter

As the main University accommodation and public transport hub, this Quarter has many characteristics and features which support campus activation and the student and visitor experience. Demarcation of the arrival into the University QEIMC precinct should be enhanced and a stronger command of the visual identity of the campus should continue along Stirling Highway to Forest Hall.

Residing on campus has traditionally been seen as one of the greatest determinants of student development. There is no one archetype for success within this trend. However, for students, more time spent on campus is shown to improve average attainment, and proximate accommodation reduces the commuter focus of a campus.

The broadening of the University offer on the Crawley campus may require increased and/or varied requirements for student accommodation which could be planned for on University landholdings, on or adjacent to the Crawley campus.



The University recognises that student accommodation is important for student recruitment and retention, and particularly student life. While there is no immediate demand for additional student accommodation, there is capacity within the colleges to replace older accommodation and build at a higher density or to build new facilities on available land.

The current mix of accommodation at UWA indicates there is a gap in supply for self-catered share apartments to meet the needs of returning, second and third-year and postgraduate students. This could primarily comprise apartment-style living with up to four single rooms with shared common area and kitchen.

Although the University seeks to foster on-campus accommodation as a means to drive campus activation (as well as delivering other benefits to students), it has tended to plan student accommodation in isolation. There are few complementary retail opportunities nearby, such as grocery, food and beverage outlets, and the University has not actively driven such activity.

Urban

Residential accommodation

Build strong linkages with the Crawley precinct

Establish new campus capabilities

Activate

Greenness

Key Theme

Active Connections

Future development in this Quarter will focus on supporting student life on campus by improving the experience of living close to campus.

Proximity to the campus, retail amenity and public transport connectivity are key factors in determining site development opportunities as well as the target student market. Residential accommodation development opportunities should not be restricted to the Accommodation Quarter but could also be considered in the Southern Quarter and Crawley Village precincts, supporting new initiatives including UWA College.

A student accommodation development should be UWA-branded, though does not necessarily have to be fully owned and operated by the University. UWA could develop the facility or partner with the private sector to develop and operate this, and potentially, existing accommodation.

Planning of the Quarter, as 'buildings within a park' with greater connectivity and active recreation facilities, would further enhance the student experience. Key strategic opportunities include:

- providing greater connectivity between colleges
- potential reorganisation and consolidation of existing college accommodation and adjacent sites
- the long-term potential of a rapid transit hub connecting the Crawley QEIIIMC precinct to the city
- increased development of the Nedlands site, including options for a greater mix of activities and functions
- strategic planning for leisure and recreational landscaped areas connecting and integrating with the river foreshore and Kings Park.



Figure 40: Circulation and connection nodes

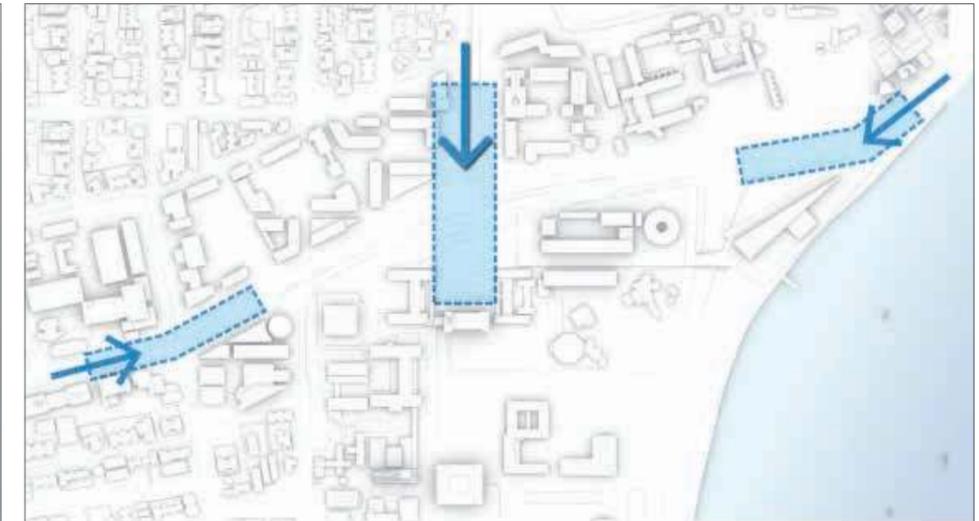
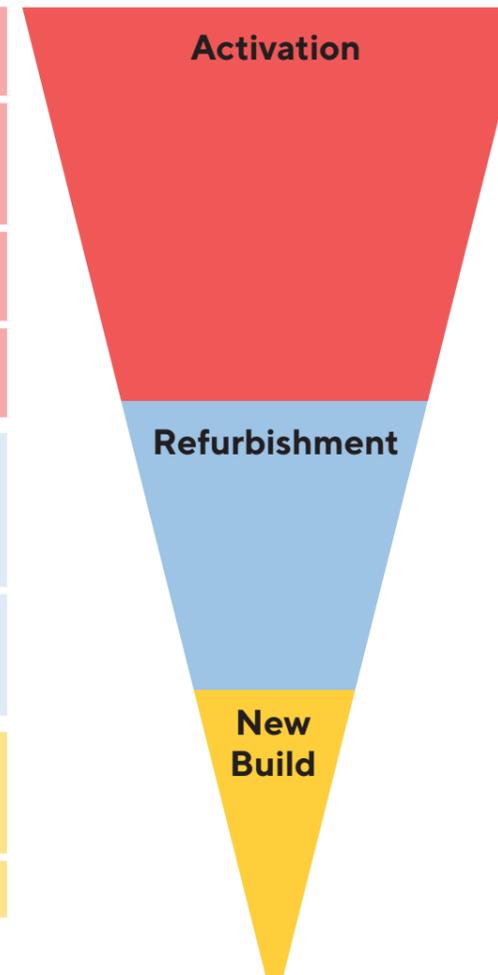


Figure 41: Gateways

Step changes

1.	Pedestrian connectivity between the colleges and within the Crawley QEIIIMC precinct.
2.	Intersections along the circulation paths create new opportunities for gathering; e.g. courtyard and plazas in a more structured and permeable landscape.
3.	Security by passive surveillance as well as after-hours restrictions at key points.
4.	Maximise opportunities to connect to the adjacent native landscape of Kings Park.
1.	Strengthen the sense of entering the quarter at key portals – east, west and north – using architectural and urban development themes... <i>cognisant with the Crawley campus architectural and landscape qualities.</i>
2.	Preserve the trees and enhance the green edge of the Quarter, particularly along the Stirling Highway, Mounts Bay Road and Winthrop Avenue edges.
1.	Plan for a greater variety of student residential accommodation options meeting the future demand of the Crawley QEIIIMC precinct.
2.	Consider opportunities for the Park Avenue site.



Projects

1.	Incrementally establish pedestrian linkages between colleges connected by structured gathering nodes from the Nedlands campus through to Forrest Hall.
2.	Co-locate pedestrian nodes with student-focused facilities including end of trip facilities, bus stops, retail, food and beverage outlets developing secondary circulation hubs.
3.	Maximising opportunities to overcome the perceived, and visual barrier/fracture that Stirling Highway creates to the precinct. In the first instance, the introduction of a line of trees in the median strip along the northern edge of the University. In the long run, a more comprehensive solution as part of the future transport hub project in the Cultural Quarter.
1.	Refurbish or replace residential accommodation which is beyond its reasonable life and no longer meets the student demands, e.g. A, B, C & D Block University Hall.
1.	Replacement accommodation for Crawley Village (250 beds).
2.	Encourage Colleges with underdeveloped sites to plan for future development including new opportunities that may present for developing the Crawley QEIIIMC precinct.
3.	Explore development opportunities for the Park Avenue site to release value for future investment into the University.

7.0 SUPPORTING STRATEGIES

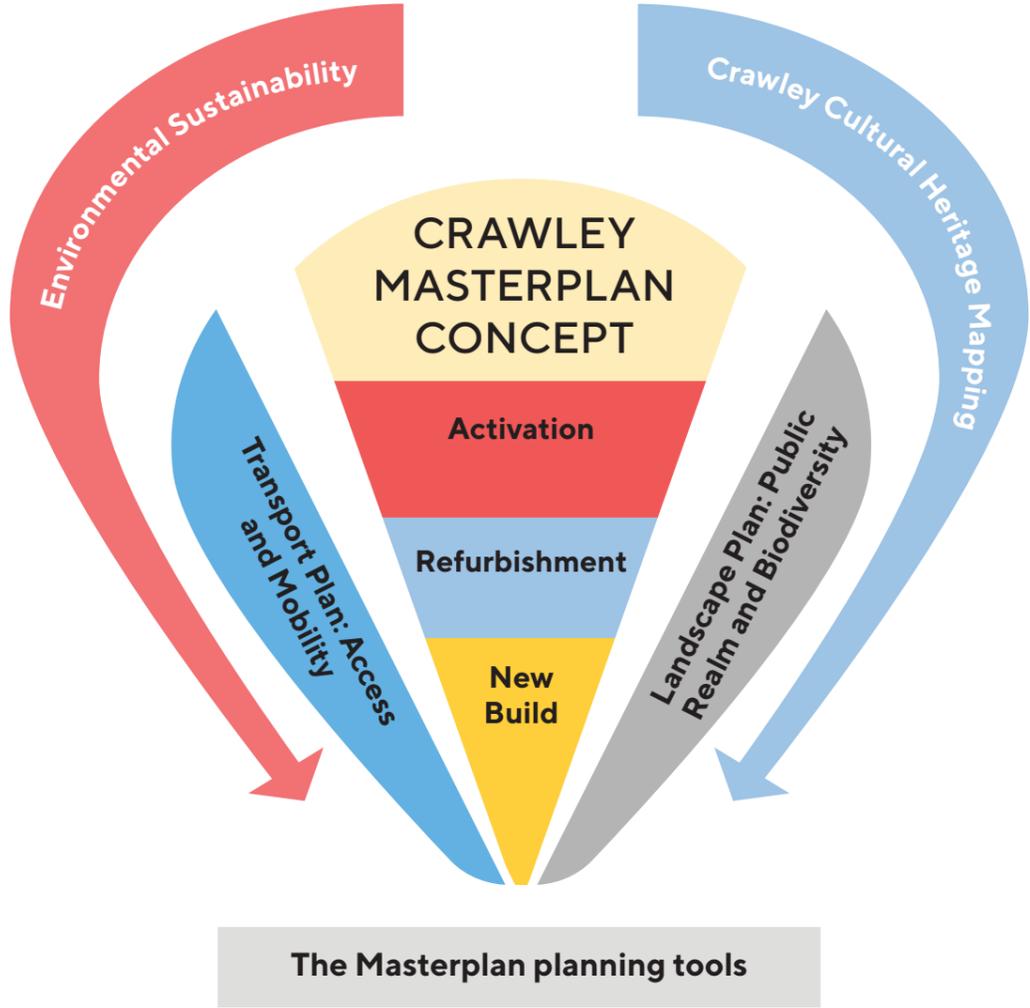


Figure 42: The planning instruments of the Masterplan

7.1 Cultural Heritage and Aboriginal Recognition on the Crawley campus: Kaatajin Boodja

Informing how the university acknowledges foremost that it is a place of 'learning on country'.

The UWA 2020-25 Strategic Plan both acknowledged that it is our place that defines our uniqueness, and that it is the Whadjuk Noongar tradition, knowledge and culture that provides this rich and unique lens through which we can view and understand our environment. The Masterplan aims to enhance this lens by mapping the collective knowledge across the campus to create a new kind of precinct legibility, based on narratives passed down and natural wayfinding environmental features. Many Aboriginal recognition initiatives have been undertaken across the campus and this project intends to build on these with additional knowledge and interpretation of place and connections.

A Cultural Heritage Mapping process was developed alongside the Masterplan, and the outcome from this work will be used in the future to directly influence the spatial planning and physical development of the Crawley precinct through

key learning themes, site narratives and design principles. The process was heavily reliant on guidance from Whadjuk Noongar Elders and leaders who have the authority and respect to speak for country, as well as literature reviews.

Through this work, the University's commitment to a creative, inclusive and diverse organisation is recognised, and it specifically acknowledges the vision of UWA as a place of 'Learning on Country'. It formalises the cultural significance of the land the campus is built upon, one which is deeply entrenched in the cultural identity of the Whadjuk Noongar people and aligns symbolically with The University of Western Australia as an educational organisation. Concurrently, it acknowledges that over the past 100 years the staff, students and graduates of UWA also have contributed to the cultural history of the site as the University has expanded and developed.

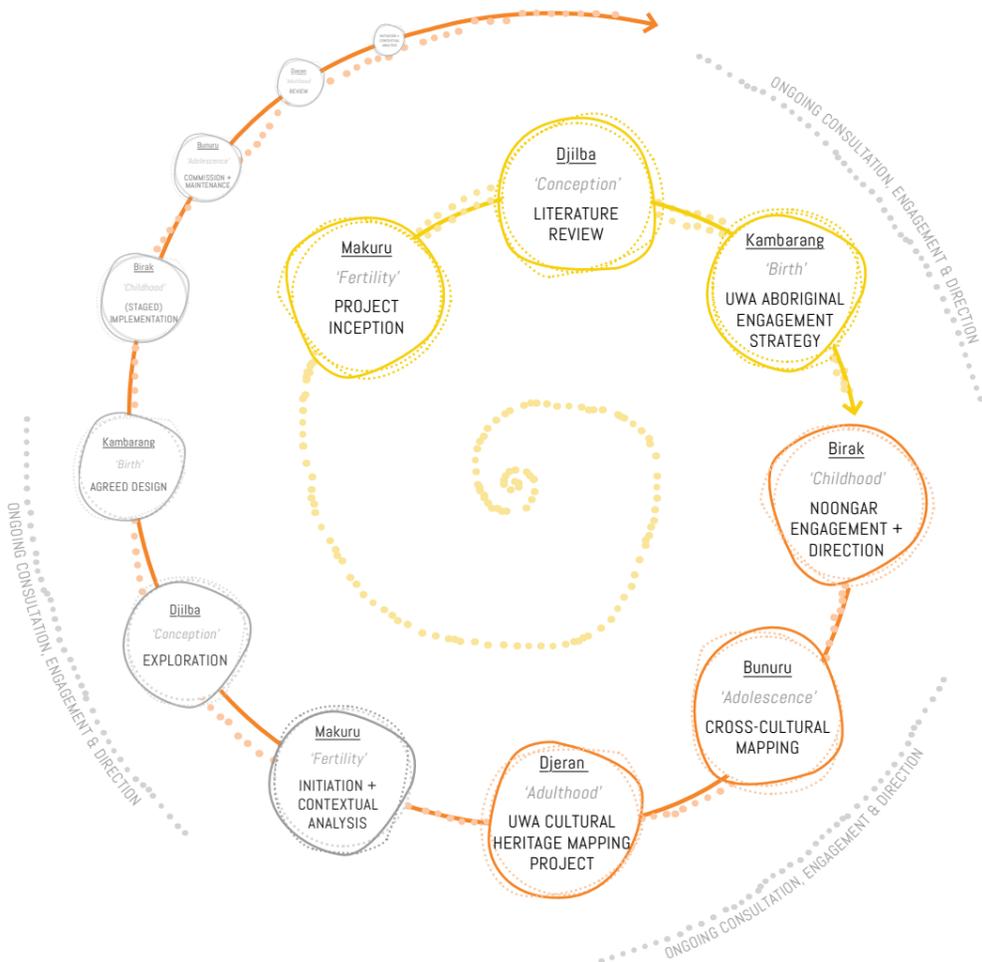


Figure 43: Cultural Heritage and Aboriginal Recognition on the Crawley campus



Dr Richard Walley OAM endorsed the 2020 UWA Crawley Campus Masterplan (Draft), and specifically the UWA Cultural Heritage Mapping: Crawley Precinct. Our conversation is transcribed, below, and becomes the forward to the UWA Cultural Heritage Mapping: Crawley Precinct.

The Cultural Heritage Mapping: Crawley Campus project prepared by UDLA is correct, and a high level documentation and signification of Aboriginal history of the Crawley campus precinct. It also takes direction from the UWA Indigenous Strategy. Senior Whadjuk Noongar people were engaged for their input into the formulation of the document. A more comprehensive consultation process will be developed going forward. This is a living document and has the capacity for review, update and revision.

The outcomes have been incorporated into the 2020 UWA Crawley Campus Masterplan (Masterplan), and provide a resource to influence physical strategic planning and development decisions on this culturally significant setting on the Swan River.

It is important also to acknowledge the Aboriginal recognition on the Crawley campus to date. This has been visually demonstrated in the 2021 Bilya Kaatajin (learning on the river, refer Figure 48) a cultural infusion site plan which highlights the areas that have evolved across campus with consideration of Whadjuk Noongar language and narratives. This includes pathways and placemaking across campus, some of which were identified in the 2017 Landscape Strategy, the Bilya Marlee Precinct, Law Building artwork, the Naming Strategy in the EZONE Precinct and currently the evolving Six Seasons places along our campus edge and Hackett Drive. I am engaging with the University on an ongoing basis to further develop Aboriginal recognition using campus legibility as a base framework and enabling implementation on an incremental basis. For example, we are currently looking at Riley Oval, where the first Welcome to Country was held in 1976, and the southern entrance to campus where the custodian trees are located.

**Dr Richard Walley OAM
23 October 2020
Bilya Marlee building**

The UWA Cultural Heritage Mapping: Crawley Precinct Report, prepared by UDLA, has been developed to guide future developments, inform and enrich campus legibility and spatial visioning by acknowledging the 'Learning on Country' and many other important Aboriginal narratives.

The Consultation Process consisted of a Whadjuk Noongar Elders and Leaders workshop, in collaboration with the City of Perth, and 'one-to-one' yarnings provided opportunities to gather pieces and add more pieces as the project developed.

Within the report a Cultural Engagement Strategy has been proposed for guiding the consultation process. It was developed to encourage a continuous and strong cultural direction to the project. The University will continue and broaden its engagement, guided by Dr Richard Walley OAM, and other Whadjuk Noongar elders, so that Whadjuk Noongar cultural recognition is widely considered in future precinct development.

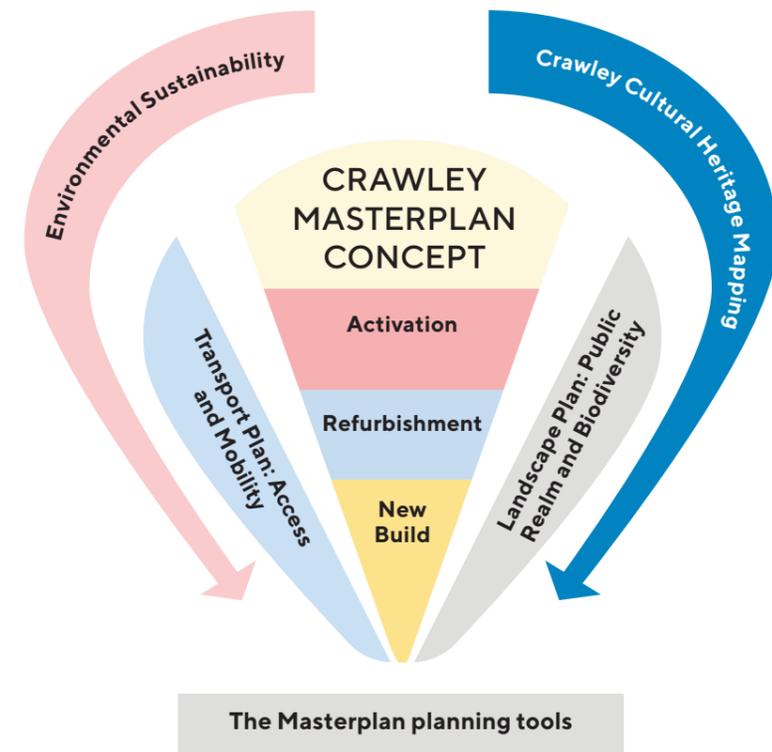


Figure 44: Crawley Cultural Heritage Mapping within the context of all Masterplan planning instruments

7.1.1 Mapping: Crawley Precinct. A Whadjuk Noongar led and inspired Cultural Heritage Framework

“Cultural Heritage is an expression of the ways of living, developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. Cultural Heritage is often expressed as either Intangible or Tangible.”

(ICOMOS, 2002)

The Crawley Precinct Mapping is a Whadjuk Noongar led and inspired Cultural Heritage Framework. It is a 'living' visual map of the University's Cultural Heritage. This documentation, through paint on canvas, is a culmination of traditional Whadjuk Noongar knowledge and cultural narratives of the campus and its immediate surrounds. It represents the first stage of the spatial analysis of the knowledge that has been developed with UWA by Whadjuk Noongar Elders and Leaders Margaret Culbong, Doolann Leisha Eatts, Farley Garlett, Vivienne Hansen, Morten Hansen, Richard Walley, Sandra Harben, Noel Nannup, Herbert Bropho, Len Collard and Michael Ogilvie. Through an immersive workshop held on Country, many intimate yarnings and ongoing conversations about the cultural heritage of the Crawley precinct were shared. From the yarning and place narratives, key themes, distinct locations, broader areas and/or lines of significance are located spatially in a set of Precinct Studies (refer to Figure 45).

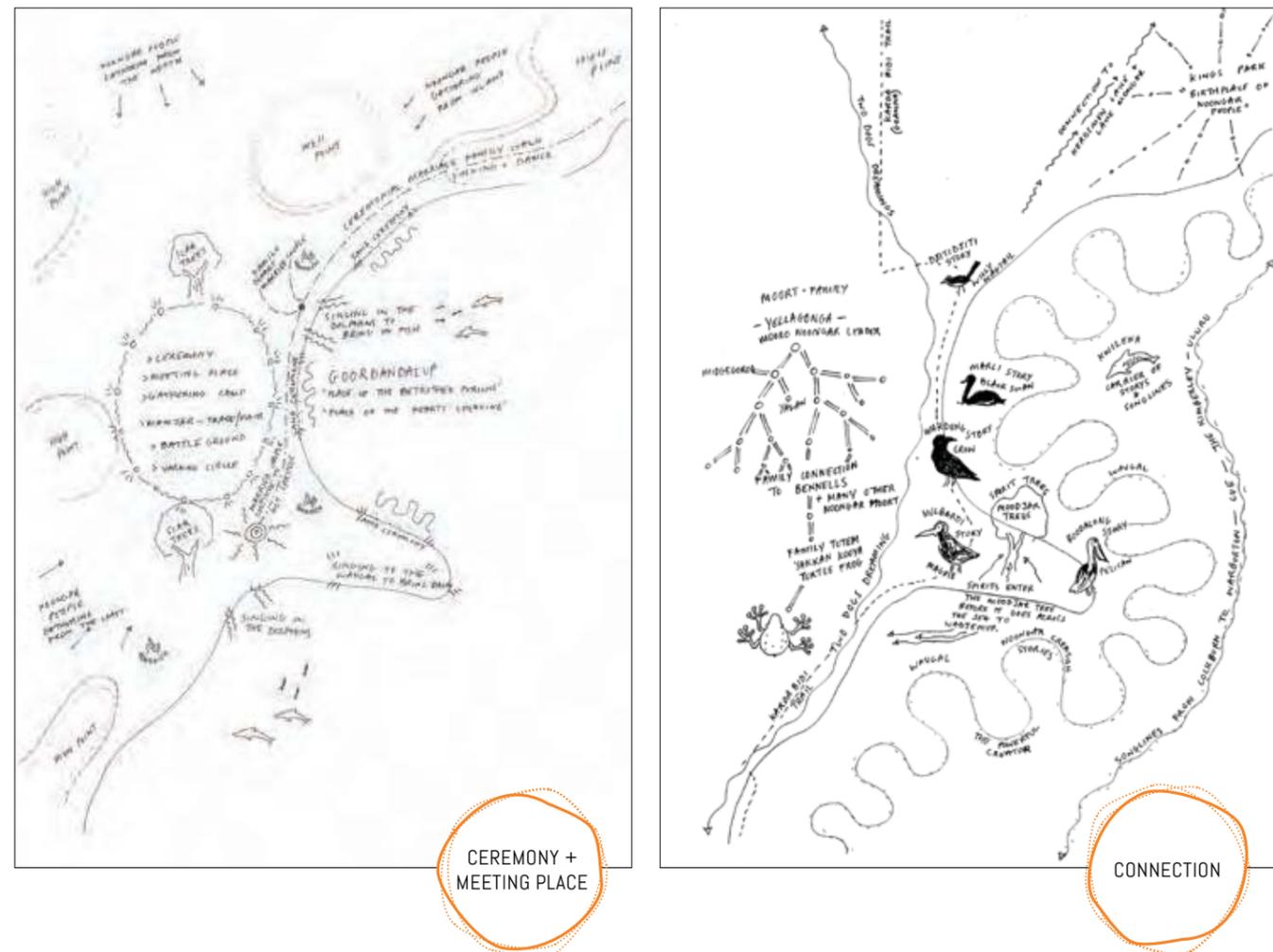


Figure 45: Precinct Studies – Ceremony + Meeting Place, Connection, Water, Abundance, Language, Sharing

Alignment was made with ecological and seasonal patterns, with landscape form, water bodies and the sky, a connected entity in which Aboriginal Peoples ceremonially observe, access, traverse and manage. This information was then illustrated through clear graphic and written documentation (quotations), culminating in a richly layered artistic cultural map.

Local Whadjuk Noongar artists Barbara Bynder and Shane Hansen were engaged alongside facilitating cultural mapping artist Kim Mahood through an expressions of interest process coordinated by Karen Jacobs. On Whadjuk Noongar Country in September 2019, the artists set out to interpret the shared knowledge, and create the vibrant and interpretive map of the tangible and intangible cultural heritage values that situate UWA.

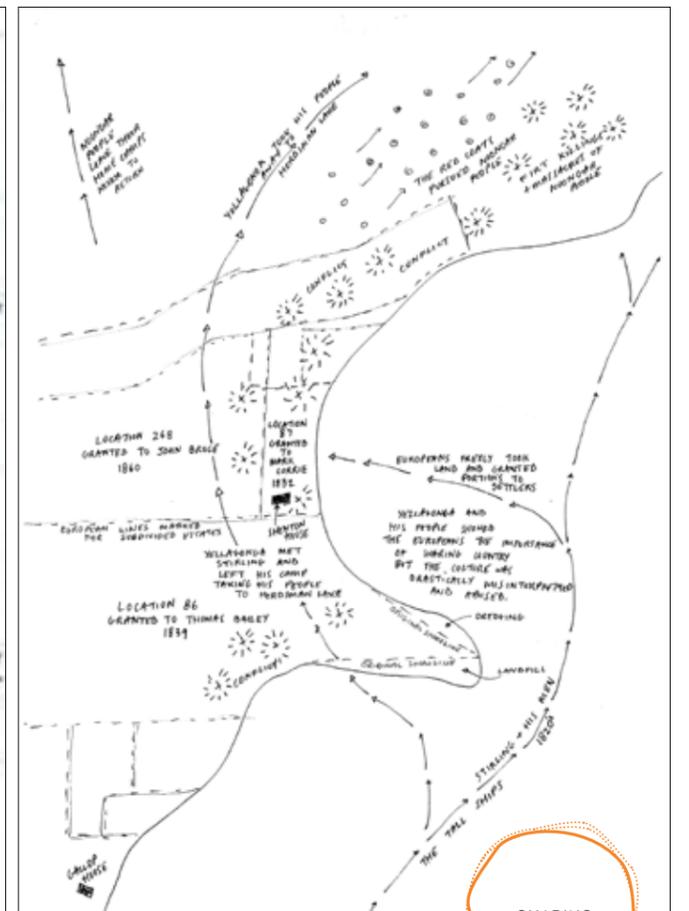
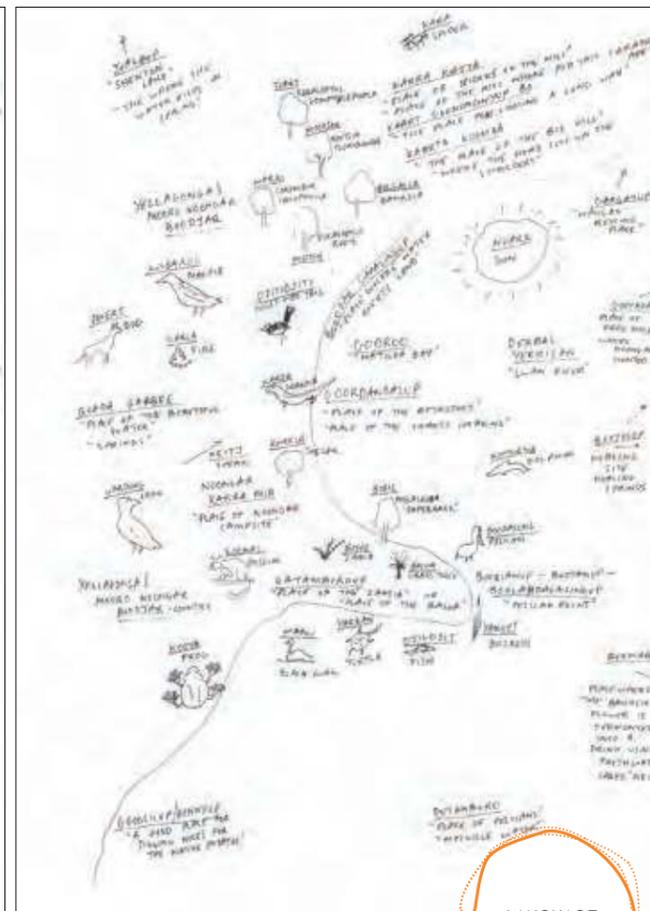
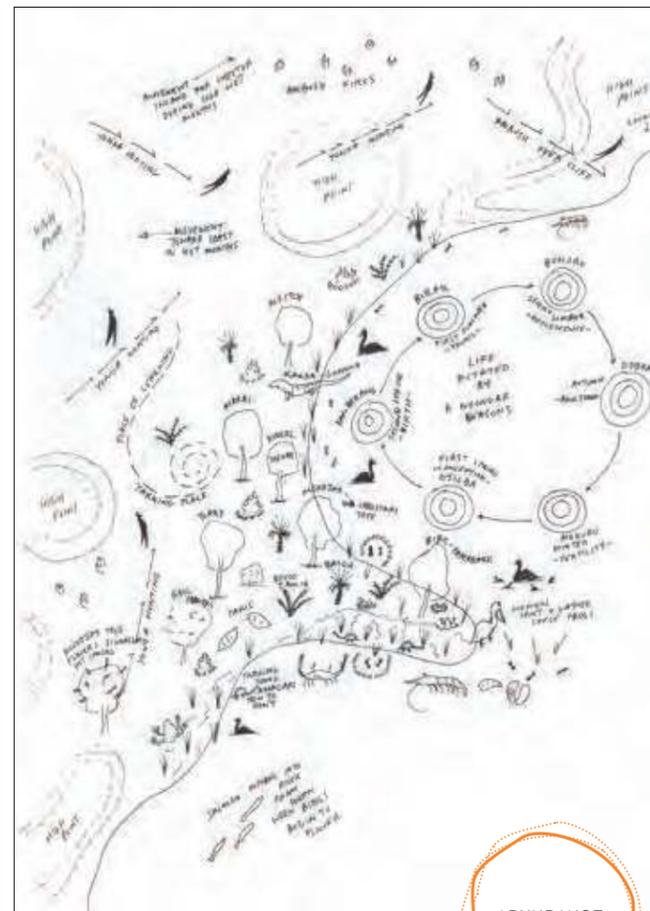
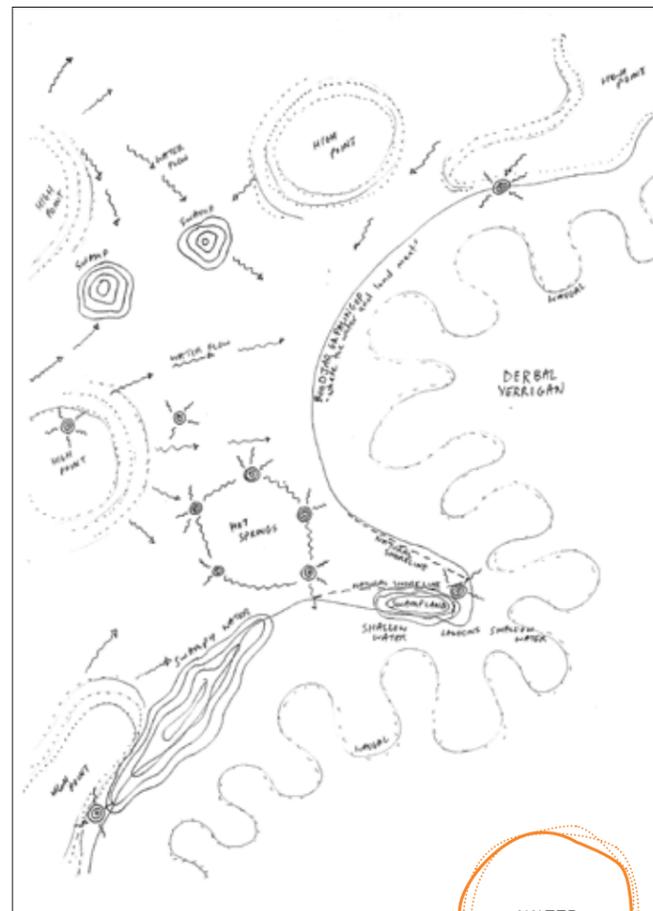




Figure 46: Cultural Mapping of the Crawley precinct

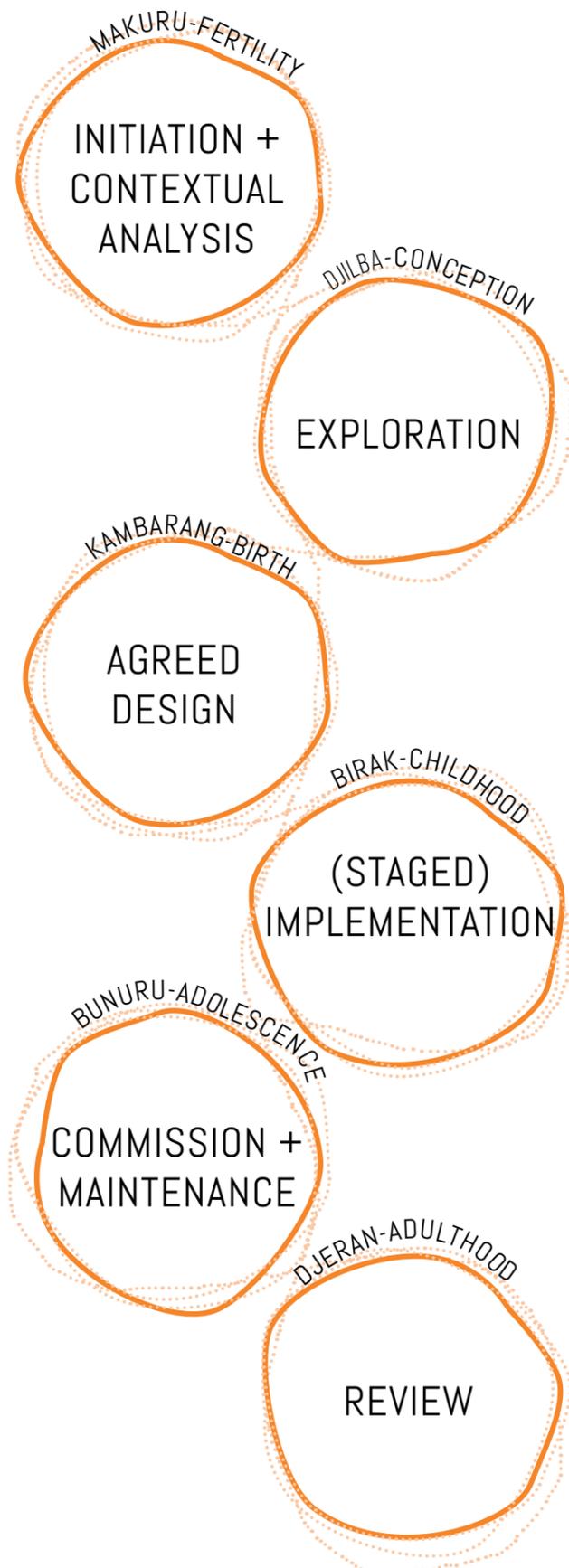


Figure 47: Noongar Six Seasons Project process

7.1.2 Design Principles

The following design principles and recommendations have evolved from the UWA Cultural Heritage Mapping project findings. They propose spatial and organisational directions, influenced by local Whadjuk Noongar knowledge, to enrich the future of the UWA Crawley campus, in turn enhancing a local 'sense of place' for students, staff and visitors – a place of 'Learning on Country'.

Guiding Framework: Whadjuk Noongar Six Seasons

The Six Seasons are to be considered as a guiding framework for organisational governance, spatial planning and design.

Aligning the Document

The UWA Cultural Heritage Framework is to guide and inform other UWA policies and plans, where appropriate.

Enhancement and Activation

UWA's campus landscape enhancement and activation, including establishing a guiding narrative for its open spaces, planting, pathways, wayfinding, connections and meeting places, are to reflect the outcomes of all relevant cultural mapping and creative artwork direction. The approach considers establishing formal and informal inclusive meeting places across the campus to foster Whadjuk Noongar and intercultural ceremony.

Noongar Naming

Whadjuk Noongar naming, including dual heritage naming, is to be used where appropriate, incorporating both internal and external spaces. All new buildings are to acknowledge appropriate Whadjuk Noongar recognition in the naming of these significant spaces.

Note: Whadjuk Noongar naming of places requires thorough research and genuine engagement with local Elders and Leaders prior to decisions being culturally agreed to and approved. Appropriate ceremony is to take place during the naming of places.

Interpretation

Whadjuk Noongar language is to be acknowledged as an oral language. It is recommended that Whadjuk Noongar language is respected courtesy of correct pronunciation and meanings, as guided and overseen by Whadjuk Noongar Elders and Leaders.

Note: The interpretation of UWA's Cultural Heritage is to be achieved through a Whadjuk Noongar Elder and Leader approved suite of wayfinding elements, including signage and art.

Reconnecting the River, Redefining the Connection to the Natural Environment

All future estate planning and design is to readdress the current lack of visual and spatial recognition of the Swan River – Derbal Yerrigan. When views of the Derbal Yerrigan cannot be realised, reconnecting back to the river is best understood through the language of natural wayfinding. This narrative is supported by Whadjuk Noongar tradition, lore and culture and includes acknowledging the riparian links through the replenishment of local flora and fauna biodiversity, including the re-establishment of a riverine urban forest. Enhancing a natural wayfinding approach will reconnect the campus with its strongest environmental and cultural asset.

Note: The river is central to Whadjuk Noongar tradition, lore and culture and also to the original location of the UWA campus. Bootanup/Boorianup (Pelican Point) once was a favoured camp, with ample opportunity for hunting, food gathering, learning, ceremony and cultural practice for Whadjuk Noongar people, and still holds immense significance today.

Whadjuk Noongar naming, including dual heritage naming, is to be used where appropriate, incorporating both internal and external spaces.



7.1.3 Priority Recommendations

'Living' Document

In recognition that the Cultural Heritage Mapping and Bilya Kaatajin are 'living' documents, it is recommended that the University reaffirms an ongoing relationship with Whadjuk Noongar people, including the formulation of a reference group. A Whadjuk Noongar reference group will continue to provide input into the life of the campus, including providing additional local knowledge, stories and narratives pertinent to UWA.

Learning on Country

The document recommends clarifying to all students, staff and visitors that 'Learning on Country' holds relevance to the traditional and contemporary understanding of a 'living', ongoing cultural heritage.

Implementing the Mapping Process and Displaying the Cultural Map

Future spatial planning is to reflect the Cultural Map, including the six supporting precinct studies and the mapping process, in order to establish the shared vision of the Crawley precinct as a place of 'Learning on Country'. Awareness of the Whadjuk Noongar stories of the Crawley precinct and the local connection to country is to be highlighted through landscape design that incorporates place enhancement, activation, wayfinding and interpretation. It is recommended that the Cultural Map is displayed in a location for premium viewing by students, staff and visitors.



Exemplar Precincts

1. Bilya Marlee

The new School of Indigenous Studies building, Bilya Marlee, is located by the Derbal Yerrigan (Swan River) amongst an existing group of mature Marri trees. This precinct provides a sense of belonging, a place called home, to Aboriginal students on campus. Specific types of planting and the creation over time of several places and pathways with Aboriginal names is intended to provide natural wayfinding across the precinct and symbolise the idea of the 'nest'. The building design and artwork made several strong gestures towards this nurturing relationship of landscape, river and people. The Black Marlee (Swan) emerged as an important reference, informing the internal colour scheme, providing a subject for the significant public artwork by Whadjuk Noongar artist Sharyn Egan, displayed in the main lobby space of the building and eventually becoming the name of the building itself.

2. Southern Quarter

UWA is to utilise the Southern Quarter as an exemplar to the UWA Cultural Heritage Mapping project. For example:

- Greater connection to Derbal Yerrigan.
- An environmentally-strong and attractive landscape that has a substantial abundance of tree groves.



7.1.4 Bilya Kaatajin (Site Plan 2021)

Bilya Kaatajin is the evolving documentation of the Crawley campus with Whadjuk Noongar tradition, knowledge and culture the primary focus, informing and enriching the organisational and spatial visioning of the University and future development projects on the Crawley campus. The UWA Cultural Heritage Mapping: Crawley Precinct supports the development of this Site Plan.

These campus places begin to capture the evolving Aboriginal recognition across the University as a network of linkages and meeting places, based on stories, native flora and fauna, past and present, promoting a reconnection to the river and redefining connections to the natural environment.

As a living document, Bilya Kaatajin will over time create an overlay of Aboriginal recognition across the entire campus and provide a unique legibility to this 'campus on country'.

Bilya Biddi - The River Walk from the new EZONE precinct on the western edge of campus, past the Reid Library, to the river edge of campus, north of Law. Bilya Biddi is the indicative location of an original water stream to the river, as identified in the Mapping.

Briana Biddi - The Banksia Walk (to Kings Park) is a proposed public boulevard along the eastern edge of campus, supported by a series of placemaking initiatives with names aligning with the Six Seasons. The first place to be developed is where the first Australian Welcome to Country took place, on the edge of Riley Oval.

Djeran - On the edge of Riley Oval. This season sees red wildflowers take bloom, especially the Red Flowering Gum and the petite Summer Flame and banksias start to display their flowers. The proposed introduction of banksias, reducing the extent of the ring road, and up-lighting the existing trees on both sides of Hackett Drive, to create a civic place on the river edge of campus and provision to improve the orientation of the University Club as a 'first point of contact' for the University.

Djilba - Bilya Marlee Precinct. As the season progresses and the temperatures continue to rise, you will see the flower stalks of the Balgas (Grass Trees) and notice cream and striking blue coloured flowers. As the days start to warm up, you'll hear and see the first of the new born animals with their parents providing them with food, shelter and protection from other animals and people. The woodland birds will still be nest bound, hence the swooping behaviour of the Koolbardi (magpie), Djidi Djidi (Willywag tails) and the Chuck-a-luck (wattle birds). This place marks the end of Marlee Biddi, and a potential place to cross Hackett Drive, or just look to the river as you enter Bilya Marlee via the fire place, karlark, or the grassed ramp to its upper level.

7.2 Environmental Sustainability (guided by the United Nation’s Sustainable Development Goals)

A defining characteristic of UWA 2030 is to ‘embed sustainability and fair-trade principles into the developmental and operational activities of the campus’; with a key pillar of the strategy being the creation of a more clean, green and sustainable campus. As previously noted, UWA aims to reduce our environmental footprint by preserving the biodiversity of our grounds, preventing environmental impacts from our resource use and preparing for climate change risks. These principles are guided by the United Nation’s Sustainable Development Goals (refer www.undp.org/content/undp/en/home/sustainable-development-goals.html).

The University released its Strategic Plan 2020–25 in May 2019 which outlines an ambitious sustainability agenda to be addressed by all areas of the University. An updated sustainability roadmap and plan is now required.

The Environmental Sustainability Strategy addresses how we preserve the biodiversity of our grounds, prevent harm through our resource use (energy, water and waste) and prepare for climate change risks through design of our built forms and business planning.

A central focus of the Environmental Sustainability Strategy is achievement of Energy Carbon Neutrality by 2025, which is one of the measures of success under the Sustainable Environments pillar. This is planned to be achieved via an amalgamated strategy of energy efficiency upgrades of building services, on-site renewables’ generation and off-site renewables’ procurement. Supplementary to this strategy is the potential for a campus micro grid, supported by distributed generation and storage solutions which can offer collaborative teaching and research opportunities.

The Environmental Sustainability Strategy also proposes waste and water targets in the medium term to minimise our environmental impact. A program of initiatives has been proposed for further consideration and development.

The Environmental Sustainability Strategy sits within a larger framework of sustainability activities across the University. A snapshot of these activities is shown below.

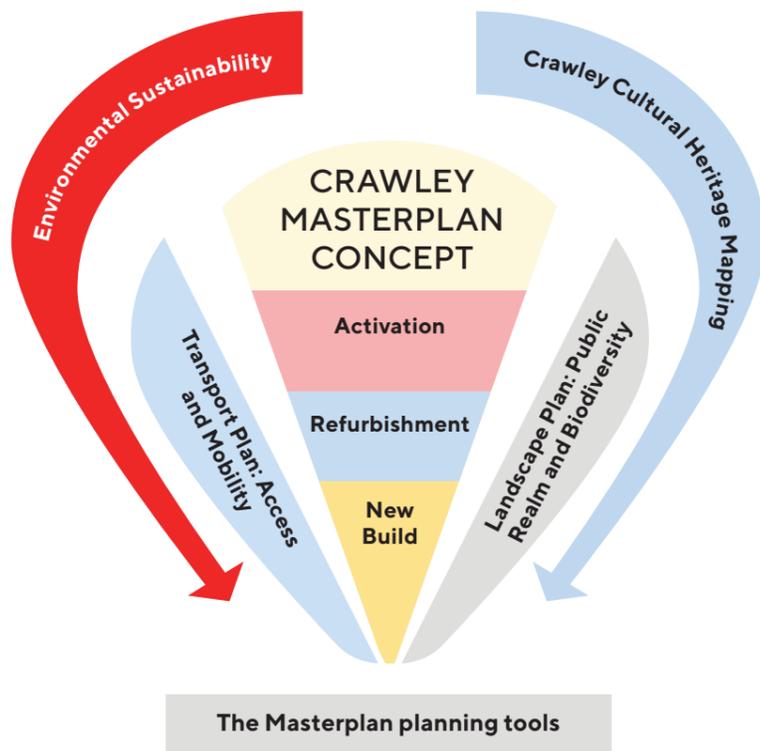


Figure 49: Environmental Sustainability within the context of all Masterplan planning instruments

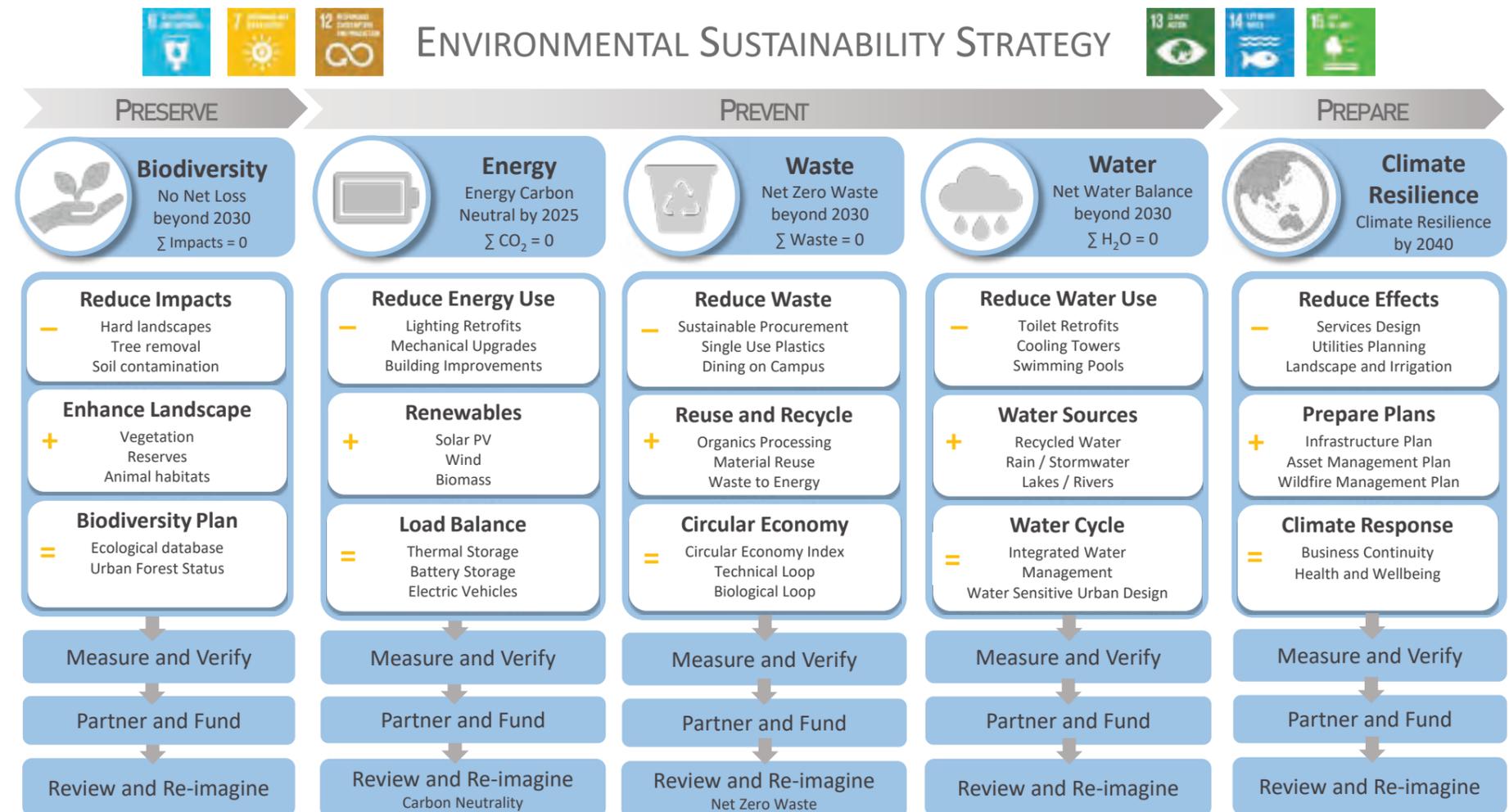


Figure 50: Environmental Sustainability Strategy 2020-25

A central focus of the Environmental Sustainability Strategy is achievement of Energy Carbon Neutrality by 2025, which is one of the measures of success under the Sustainable Environments pillar.

UWA 2030: Strategic Plan 2020-25

Mission

To provide world class education, research and community engagement for the advancement of the prosperity and welfare for our communities.

Vision

Creating the next generation of global leaders through experience-rich education and world-leading, trustworthy research.

Positioning Strategies

Enabling Strategies

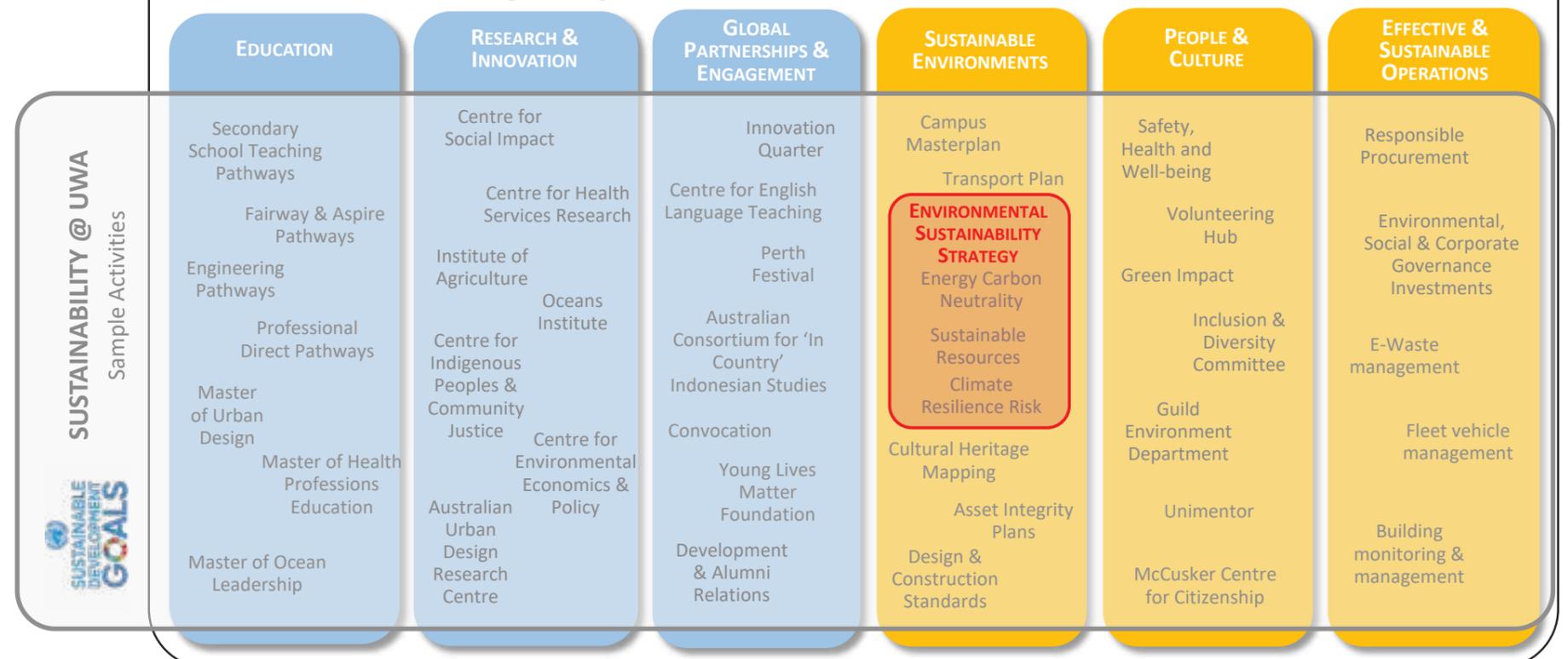


Figure 51: Sustainability activities snapshot embedded in UWA 2030: Strategic Plan 2020-25 Positioning and Enabling Strategies



7.3 Landscape, Public Realm and Biodiversity

The Masterplan, like all previous UWA masterplans, recognises the significance of the established landscape spaces and the parkland setting of the Crawley campus. All future development on campus is considered within this context.

The Landscape and Public Realm Strategy prioritises the preservation and enhancement of the campus grounds and establishes a new vision of the campus as an urban forest. It identifies locations for significant tree groves and a network of tree connections to both maintain and increase the tree numbers and ensure the biodiversity of the site is preserved. Supporting this policy is the reduction, incrementally, of the visual and physical presence of vehicle activity and car parks across the precinct, by prioritising green allotments and the rationalisation of the ring road.

The key objectives of the Landscape and Public Realm Strategy are to:

- open up the edges of campus to reconnect to the river and celebrate its unique surroundings
- consolidate and activate the campus core
- provide intuitive wayfinding possibilities and amenity to walkways
- foreground the intercultural assets of the campus by demonstrating tangible ways of recognition and communication of the heritage of campus and provide new ways of experiencing 'Learning on Country'
- improve the biodiversity of the precinct.

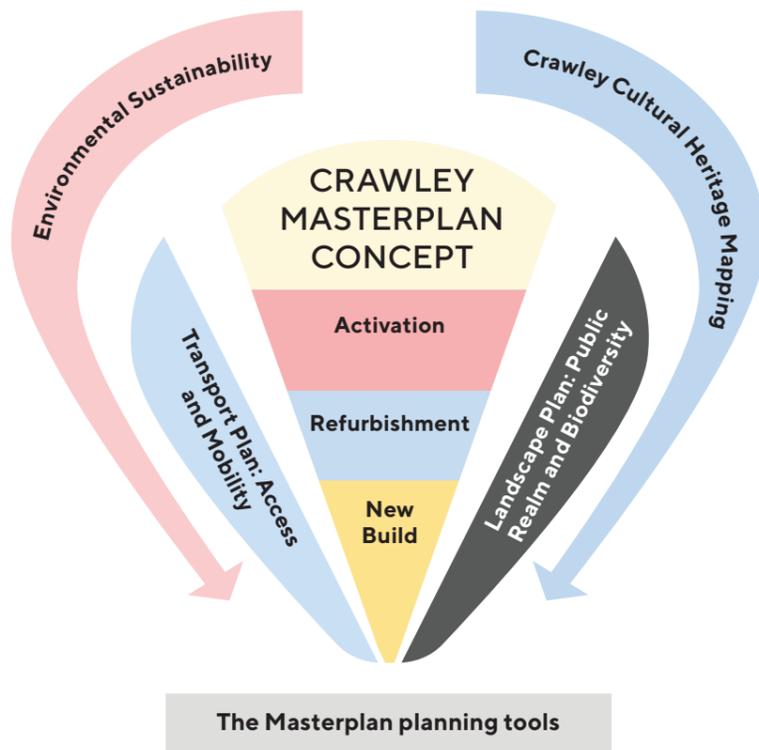


Figure 52: Landscape Plan: Public Realm and Biodiversity within the context of all Masterplan planning instruments



The Diagrammatic Masterplan further articulates the key spaces, connections and gateways across the UWA campus, and to the adjacent Fairway and the Swan River.

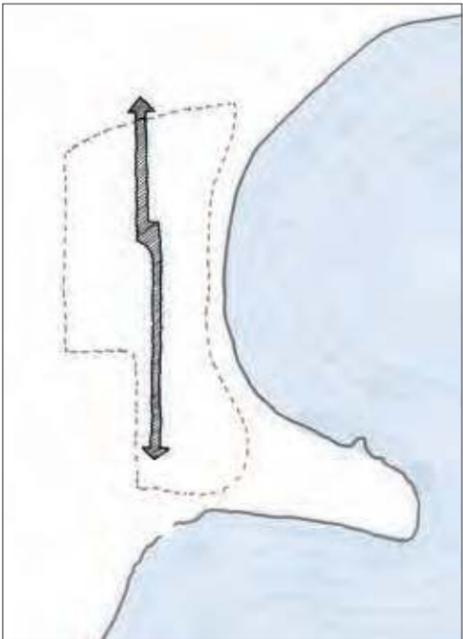
- ↔ - Saw Promenade
North-South Spine Connection
- ↔ - The River Walk
North-South Riverside Link
- ↔ - Gillette Promenade/ Sunken Garden-E-Zone
North-South Secondary Links
- ↔ - Batty Walk
East-West Nodes Link
- ↔ - Campus Street
East-West Major Links
- ↔ - Campus Paths
East-West Secondary Ped Links
- ↔ - Six Seasons Loop Walk
Southern Custodian - Campus Link
- ↔ - Visual Connections
The Swan River + Kings Park + Perth City + Pelican Point
- ⊛ - Gateways
North + East + South + West
- ⊛ - Point of Interests
- - Campus Nodes

Figure 53: Wayfinding and key initiatives

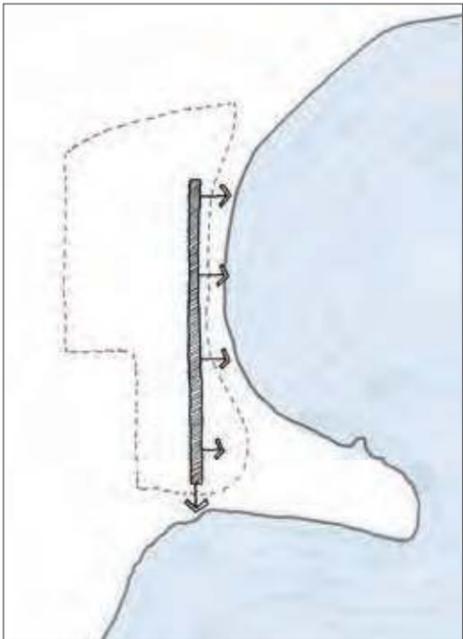


7.3.1 The Eight Big Ideas

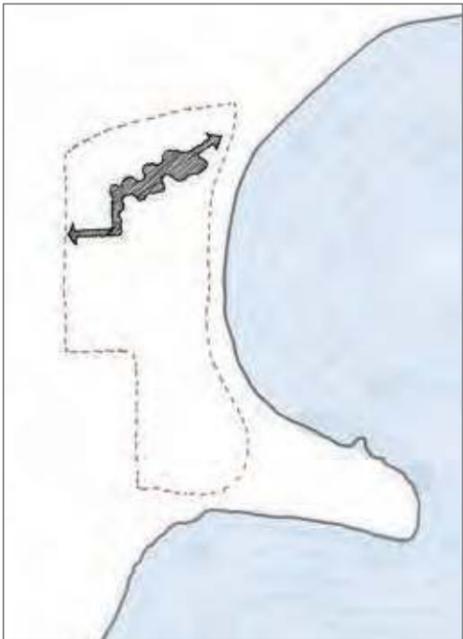
The Eight Big Ideas of the Landscape and Public Realm Strategy are based on placemaking and intuitive means of navigating the campus through wayfinding for students, staff and the community.



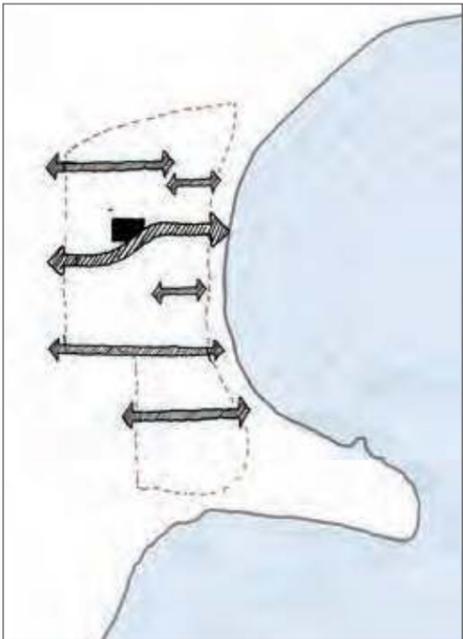
Saw Promenade



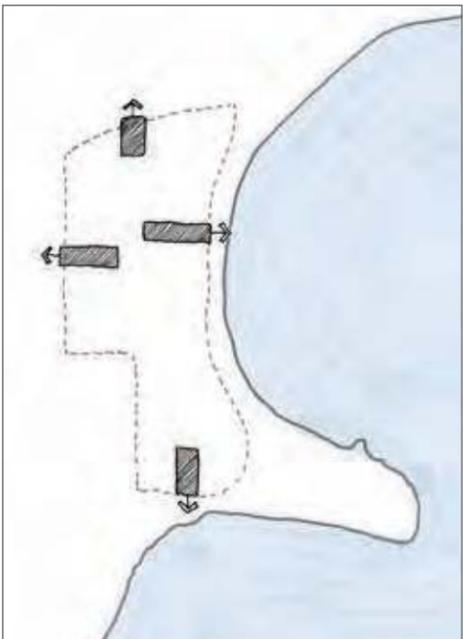
Briana Biddi



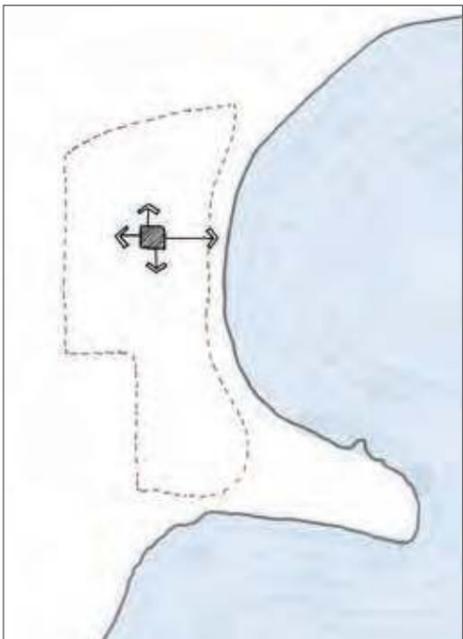
Battye Walk



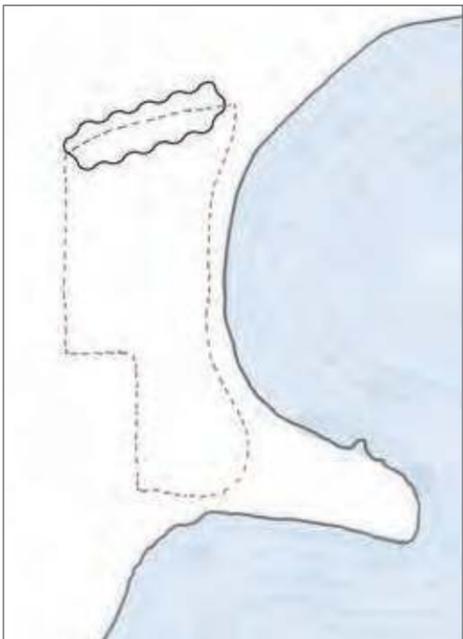
East West Paths (including Bilya Biddi)



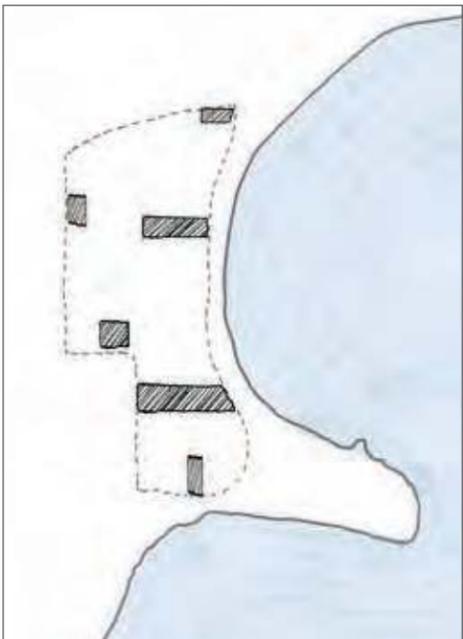
Entry Gateways



Reid Square



Stirling Highway Frontage



Tree Groves

Figure 54: The Eight Big Ideas



THE EIGHT BIG IDEAS	OBJECTIVES
<p>Saw Promenade Develop Saw Promenade as the central spine and wayfinding device.</p>	<p>Reinforce Saw Promenade’s primary circulation role by encouraging activated edges and permeable learning spaces along its length. This circulation initiative responds to existing north-south movement patterns of the campus.</p> <p>The spine will become the University’s principle ‘desire line’ and point of orientation connecting to other movement patterns within the University. It shall be supported by high-quality landscape treatments, activated building edges and rejuvenated landscape rooms. Broad paved areas and green treatments, such as avenue plantings or planted arbours, will provide an inviting landscape space that encompasses the whole campus.</p>
<p>Briana Biddi Recast and extend the Graduate Promenade to celebrate river-front setting and create a Six Seasons Wildflower Walk at southern end.</p>	<p>Recast the Graduate Promenade as the new public walkway and edge to the campus. This new north-to-south connection will provide an active edge which is welcoming and directly engages with the river-front.</p> <p>Will be supported by high-quality landscape treatments, activated edges and a series of improved landscape spaces which embrace and celebrate the river-front setting of campus. Large-scale walkways, social seating and green treatments, such as avenue plantings, will provide an inviting and active landscape experience. The southern end will be recast as a wildflower walk which celebrates colour, texture and beauty of local WA wildflowers. It will create a rich botanical avenue to be experienced and enjoyed by campus users and the public.</p>
<p>Battye Walk Renew historic Battye Axis as a key east-west landscape walk.</p>	<p>The Battye Axis or Battye Avenue was a clearly-defined east-west link in its earliest form but time and development have rendered this link disfigured and incoherent.</p> <p>Re-establishing this link via a raised boardwalk references the historic Battye Axis whilst strengthening this important east-west connection on campus.</p> <p>The raised boardwalk is designed to alleviate compaction and other pressures on existing trees root systems, whilst simultaneously creating a signature connection across campus.</p> <p>The existing space gives the user the experience of being enveloped by foliage and this is further embellished through new plantings on both sides of the boardwalk.</p>
<p>East-west Paths Define key east-to-west connections across campus from the Swan River to Broadway. Exemplars: Bilya Biddi and Marlee Biddii progressing from the western campus edge through to Briana Biddi, already incrementally evolving.</p>	<p>Campus has strong north-south linkages thanks to its walkways, landscaped spaces and roadways. The east-west landscapes are less legible and require further definition to stitch the campus together and provide stronger connections from the river through to Broadway.</p> <p>These new corridors will provide direct and legible connections to the east and west from the central campus spine, providing safe pedestrian access and improved amenity, with a focus on junction points with the campus spine.</p>

THE EIGHT BIG IDEAS	OBJECTIVES
<p>Entry Gateways Develop landscape gateways at the north, east and south of campus and redefine Oak Lawn as the new public gateway to campus.</p>	<p>Recast Whitfeld Court as the northern gateway and ceremonial entrance to campus by improving the aesthetic and functional experience.</p> <p>Redevelop the eastern side of Reid Library as the public gateway, with a strong relationship to the river adjacent.</p> <p>Develop a strong identity with the southern/Pelican Point entry to campus. Recast the lawn area and develop treescape adjacent to the Business School, improving permeability and access.</p> <p>EZONE UWA Student Hub forms the western gateway.</p>
<p>Reid Square Establish Reid Square as a new legacy landscape</p>	<p>The existing area east of Reid Library currently conveys an undefined and haphazard quality and is the disjuncture point of Saw Promenade. The new Reid Square shall be redeveloped to become the true civic destination of campus.</p> <p>Reid Square will provide a new, active and public plaza which celebrates university life and provides a visual connection to the river. It will provide opportunities for temporary and permanent activation, seating opportunities and improved shade.</p>
<p>Stirling Highway Frontage Redevelop Stirling Highway edge to create an enhanced and welcoming public frontage to campus.</p>	<p>This frontage is an important physical and visual connection between the University and broader community. This connection provides the opportunity to set the tone that the University is and always has been a public campus.</p> <p>The area lacks the visual presence or ‘address’ that the University deserves. The proposed public frontage will provide a strong visual presence on the adjacent streetscape with improved signage, lighting and increased permeability.</p> <p>The space will create a welcoming and accessible frontage, improving campus presentation to the wider community.</p> <p>A secondary community entry into campus could be created, providing an address to the Sunken Garden and a direct link to EZONE UWA Student Hub.</p>
<p>Tree Groves</p>	<p>Campus will lose up to 25 per cent of its tree stock through natural causes over the coming 10 years. Locations for significant tree groves and a network of tree connections have been identified to maintain and increase tree numbers and ensure biodiversity of the site is preserved.</p> <p>The Southern Tree Grove is proposed to ensure a large area in the Southern Quarter is allocated for campus canopy replenishment.</p>

Table 10: The Eight Big Ideas



Figure 55: The four main compass point entries

The four main compass point entries help to orientate the visitor to campus. Combined with several linkages between them and visibility to Matilda Bay, they provide natural wayfinding across the campus.

The importance of reconnecting the campus to the river, Matilda Bay and Pelican Point will be realised through a collaborative planning approach between the Whadjuk Noongar people, state and local governments,

UWA and its community by focusing on the Crawley precinct, rather than the campus alone. The Masterplan looks to a future where the University campus is more closely tied to the river foreshore.

7.4 Transport and Mobility

The place-based, scholarly community model¹ identifies the advantages for universities to invest in both the physical campus and its connections to the community. For UWA strong linkages between QEIIIMC, Perth City and the Crawley campus are of paramount interest but connections to the wider city and state are also of interest. The Masterplan addresses the broader issues of access to, and within the Crawley precinct, and seeks to provide realistic options for the near term without losing sight of longer-term ambitions that align with greater sustainability (refer Transport Strategy).

Whilst maintaining pedestrian access, an increase in more efficient mobility across the UWA-QEIIIMC precinct is encouraged. Proposed short-to-medium term actions could realise improved cycling paths to and around the campus, the improvement of end-of-trip facilities across the campus, and the introduction of mobility hubs providing bike hire and quality, safe and highly-visible facilities. The hubs could be destination points on the campus offering a concentration of activities, e.g. retail, social, library, recreation.

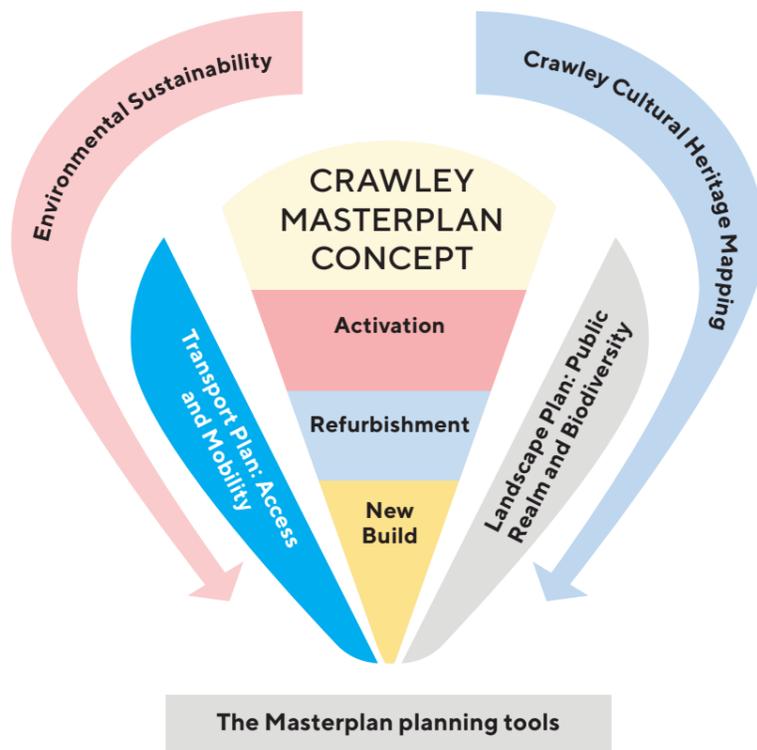


Figure 56: Transport Plan: Access and Mobility within the context of all Masterplan planning instruments

7.4.1 Transport Strategy

The UWA Transport Strategy vision and guiding principles are focused on supporting UWA to be an easily accessible campus for all staff, students and visitors, whilst continuing to improve and encourage sustainable modes of transport.

Strategic outcomes and targets have been proposed for each objective and provide a framework to measure the success and achievements at the end of the Masterplan and Transport Strategy ten-year horizon (2030).

UWA TRANSPORT STRATEGY VISION

GUIDING PRINCIPLES

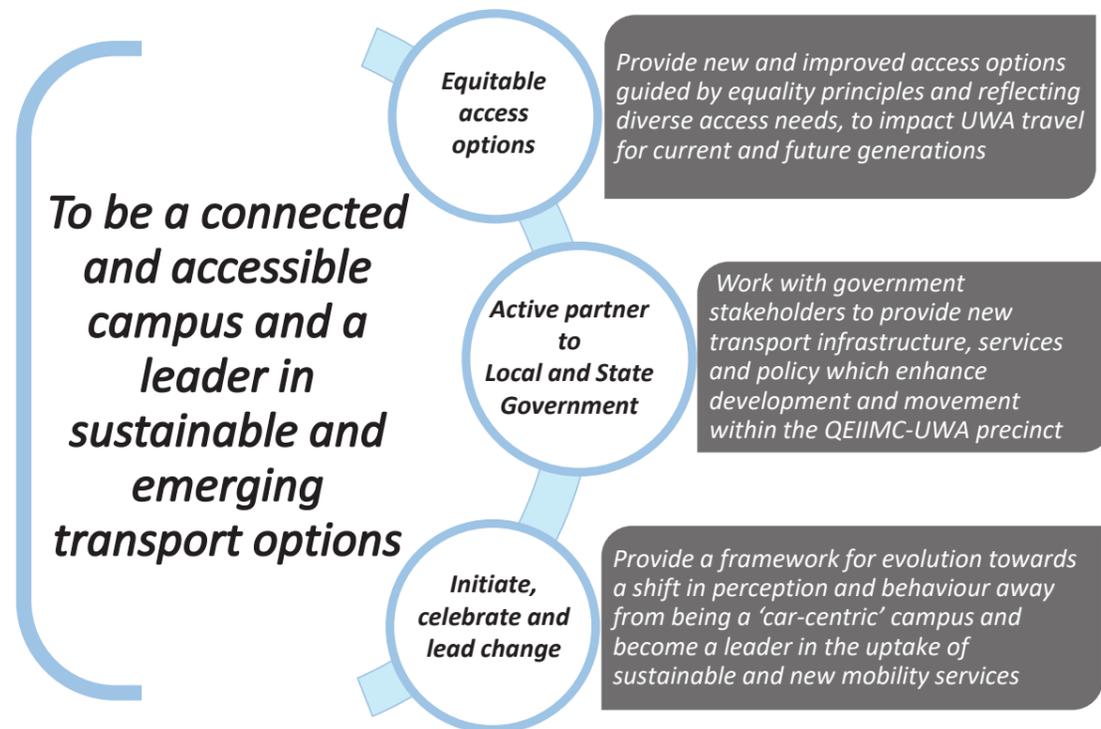


Figure 57: Transport Strategy vision

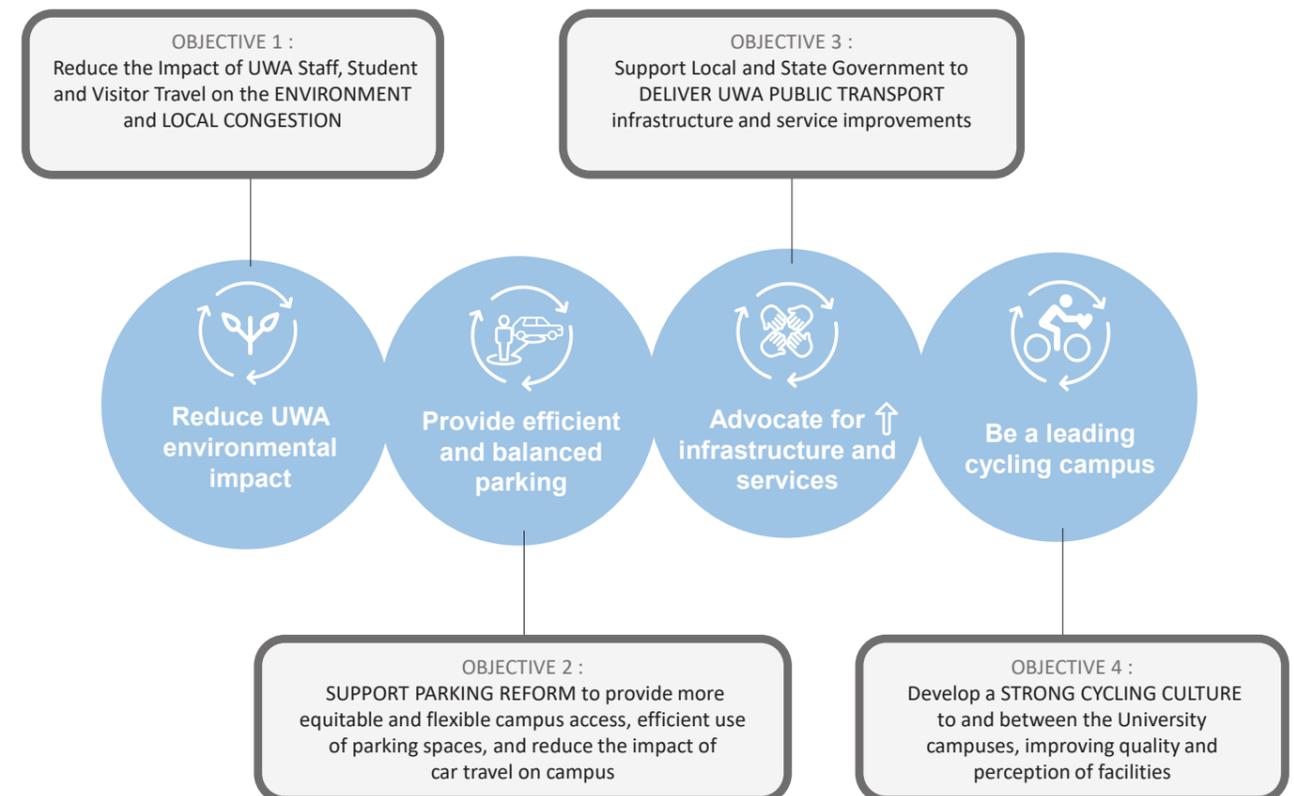


Figure 58: Transport Strategy objectives

¹ The Relationship between student engagement and their academic achievement, International Journal on New Trends in Education and their Implications, October 2014 Volume: 5 Issue: 4 Article: 19 ISSN 1309-6249.

7.4.2 Transport Strategy – Consultation and Engagement

The proposed Transport Strategy requires extensive consultation and engagement with the University community. Ideas need to be tested, verified and accepted. A Strategic Transport Committee has been proposed to guide the next stage of the introduction of the Transport Strategy.

Based on a set of key principles, the Transport Strategy proposes numerous ideas for consideration by the University. Prioritisation, communication and implementation of the actions, which best achieve the objectives, is required. The recommended actions and indicative timeframes are illustrated to the right.

Key principles proposed to inform the implementation of the recommended actions of the strategy are:

- **Accessible and Equitable:** Guided by equity principles and reflective of diverse access needs, provide new and improved access options to impact UWA travel for current and future generations
- **Initiate, Celebrate and Lead Change:** A framework for evolution towards a shift in behaviour away from a 'car-centric' campus to a leader in the adoption of sustainable and new mobility services.
- **Flexible and Customer-focused:** Meet the differing needs of customers (students, staff and public access)
- **Managing Growth:** UWA's targeted population growth will need to be met by non-car transport.
- **Active Partner to Local and State Government:** Work with government stakeholders to provide new transport infrastructure, services and policy which enhance development and movement within the UWA/QEIIIMC precinct.

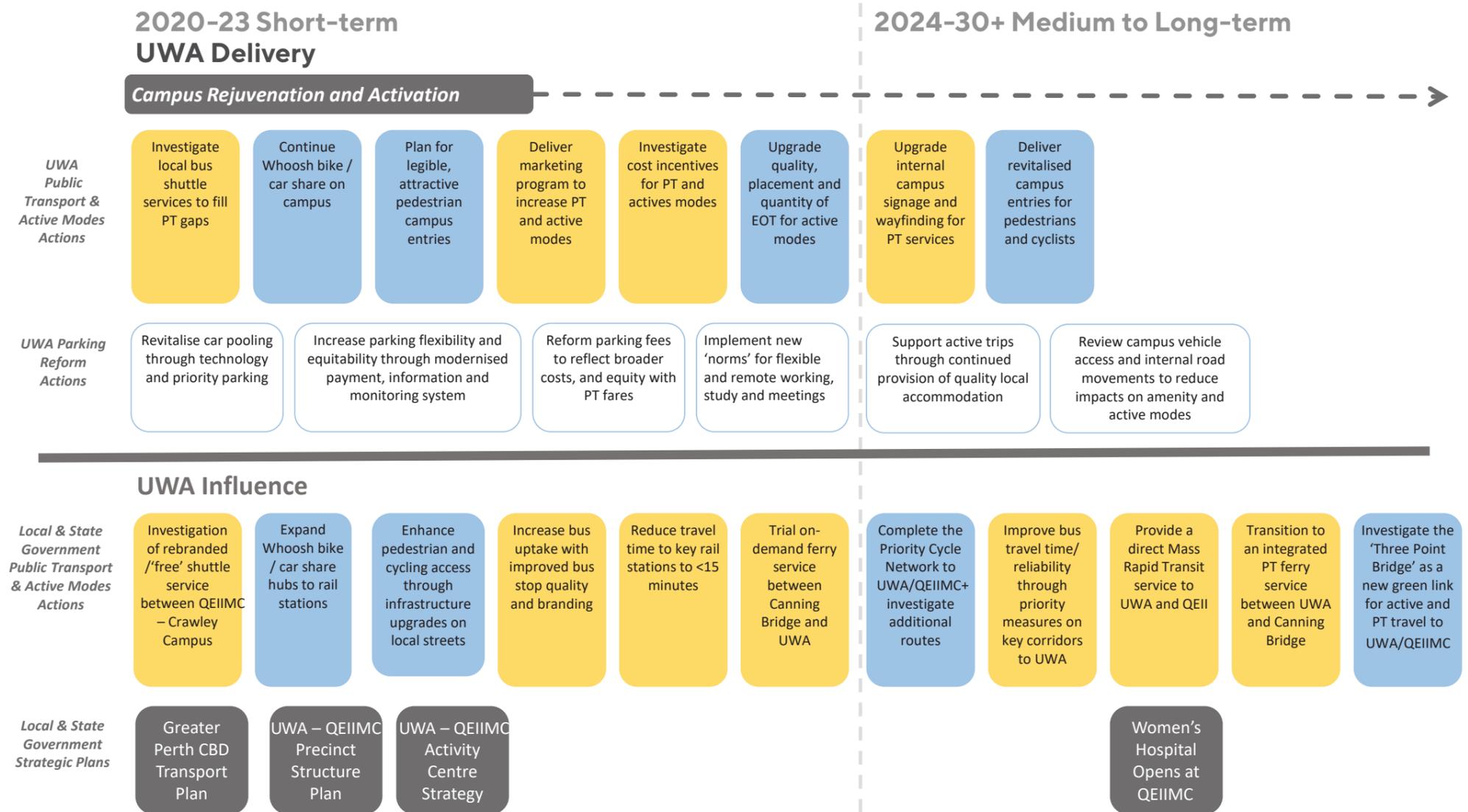


Figure 59: Transport Strategy recommended actions

7.4.3 Parking

In Campus Plan 2000, the University's parking numbers on the then campus area were capped; a policy that has been supported by the Western Australian Planning Commission. The 2000 plan capped parking at 4,250 bays, of which 3,300 were managed by the University and the remaining 950 by local governments. It is intended to continue this cap.

Improving access to the campus will need to focus on an active management of transportation supply and demand, with the provision of more choice of modes on offer, while car parking is maintained at a practical minimum. Barriers to efficient mobility between the precinct and the metropolitan area have been considered with a vision that public transport becomes better integrated and supports activation of the campus.

7.4.4 Cycling and Public Transport

A range of mobility and transport initiatives identified in the Masterplan promote a cultural change towards walking, cycling and public transport use among students, staff and the community. This includes increased cycling amenity and connections, exploiting the water transport potential at Matilda Bay and a mass rapid transport destination in the Cultural Quarter, in proximity to the Mounts Bay Road - Hackett Drive intersection.

The Masterplan provides a planning framework for eventual campus integration with a mass rapid transport solution and water transport linkages. A mass rapid transit connection to UWA and QEIIIMC would provide a direct, priority service connecting to the north western metropolitan catchment area which has indirect and slow public transport journey times to UWA, whilst also housing a large number of staff and students.

Improved access to the precinct for staff, students, community and tourists supports the development of the precinct as a public destination and provides a strong foundation to attract state and private entities to establish themselves within the second biggest activity centre, the Crawley QEIIIMC precinct, in the metropolitan area.



7.5 Activation

The campus is first and foremost a place for people; where friendships are forged, plans hatched, and futures made. This all happens through the lens of an experience that attracts, involves, and gives its students a real sense of belonging. It is a place where experience meets environment, where the past is made present, where the alumni of the future find their feet, and where theory is informed by practice. It's alive. It's relevant. It's porous. It's the flow of people, of ideas and of opportunity. It's a wonderfully-activated space, welcoming and forever owned by its users, students and staff. It's a place of great exchange – cultural and social.

The purpose of the Activation Strategy is therefore simple. It is to create an on-campus student experience that is truly world class and which utilises our campus as an outstanding place of learning and engagement. In doing so, it supports the aim to strengthen UWA's distinctiveness, to better communicate what it means to study at UWA and to 'advance the prosperity and welfare' of its many communities.

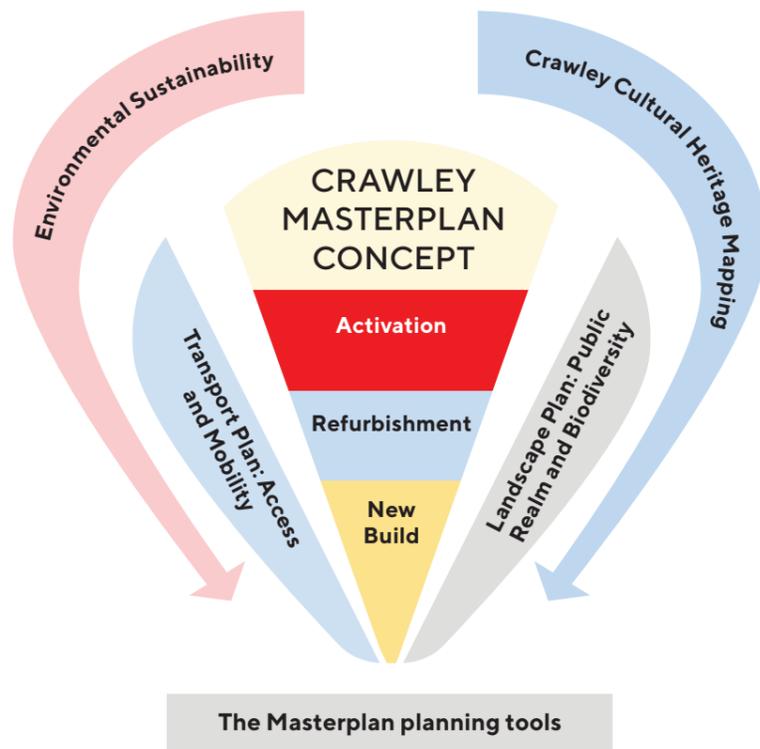


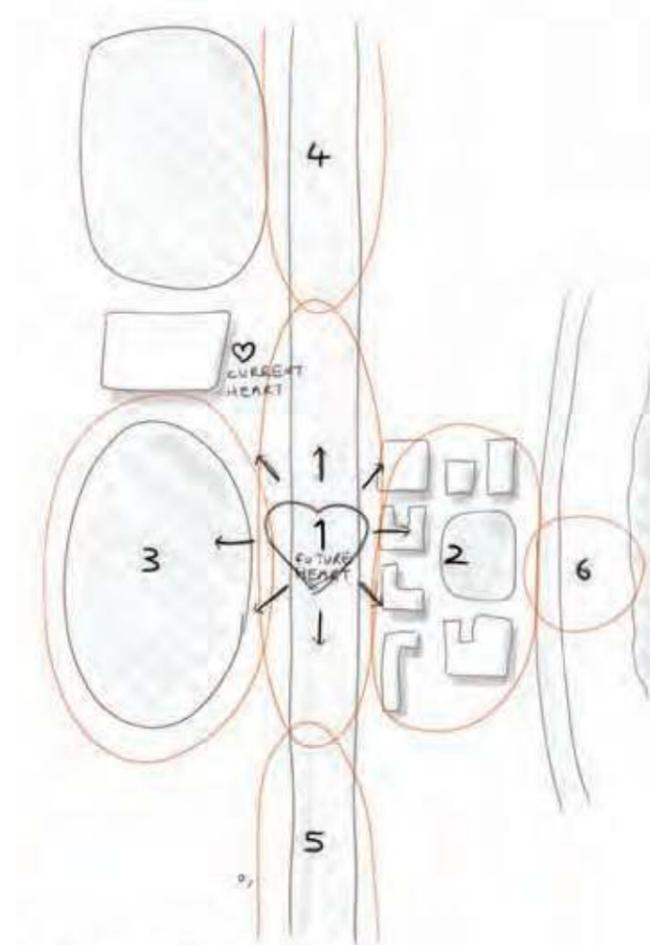
Figure 60: Activation within the context of all Masterplan planning instruments

7.5.1 Activation Strategy: A Market Place of Ideas

A Market Place of Ideas is supported and guided by three 'pillars': Free Flow of People, Free Flow of Program and Free Flow of Place.



Figure 61: A Market Place of Ideas - Three Pillars



Overview
It is suggested that the first phase of activation target the centre of campus (1) then (2) then (3) and so on.

Figure 62: Proposed stages of activation on campus

Free Flow of People: Melting pot and incubator, we are open to all, to the local and the international, to staff and students, to theorists and practitioners, to everyone interested in exchange.

Free Flow of Program: A campus is not just a static destination. It's a temporal zone, a curated market place of activity, a programmed set of events, some regular, others one-off.

Free Flow of Place: The activated campus is absolutely flexible, its hardware and software is easily adapted to multiple purposes, its spaces home to multiple types of activity. Here, space is determined by evolving economies of need and want, day and night.

A successful master-program will facilitate a 'vibrant and connected community', offering something for everybody, including the wider community, all types of student, alumni, and industry partners. Given this, it's vital that it is understood as a permanent work in progress, always evolving in anticipation of its audience's needs and wants.

7.5.2 Phase 1 Activation Plan

Phase 1 of the Activation Plan was rolled out March 2020. A program of coordinated events and activities was developed in conjunction with the installation of new infrastructure, targeted towards a more sustained campus activation program extending into future years.

The Activation Project aimed to:

- provide the infrastructure and framework to run events and activations, now and into the future
- create sustainable and impactful events and activations for students
- allow students to easily identify and engage with current and future activations
- enhance the student experience and sense of community and retain students on campus to increase campus stickiness.

Whilst reduced in impact (due to the wider challenges of COVID-19), the first phase has already provided important learnings which will inform future phases of campus activation.





7.6 Infrastructure and Services

The 2016 Integrated Infrastructure Strategy (Crawley) assessed the services infrastructure of the Crawley campus (and surrounding sites) and provided recommendations for upgrades to ensure that the services meet the future demands of the University. Recommendations which address the capacity and security of supply of the services are based on planned developments to 2025 and as assessed in 2016.

The strategy is being updated with a renewed focus on building consolidation and rejuvenation and reduced emphasis on new construction.

7.6.1 Mechanical Services

The mechanical services infrastructure comprises the chilled water and heating water systems which provides the cooling and heating requirements of the buildings. Heating and cooling ensures occupant thermal comfort and maintains environmental conditions for facilities such as research laboratories, data centres and museums and galleries.

With the completion and occupation of the EZONE and Bilya Marlee buildings, the peak demand for campus chilled water will exceed the available capacity, making it difficult to maintain thermal conditions within buildings during days of high temperature and humidity. By 2025, the thermal energy (chilled water) system must provide an additional 3.5MW of cooling capacity. There are a series of recommendations for the chilled water system that will be implemented over the short, medium and long-term.

7.6.2 Electrical Services

The electrical services infrastructure comprise high voltage and low voltage interconnected ringed distribution networks. The main issues associated with the electrical services are the age of the infrastructure and its available capacity. Approximately 30-50 per cent of electricity usage is by Central Plant for building cooling purposes. The peak electricity demand on the site is expected to decrease by about 10-15 per cent as the University progresses planned improvements in plant efficiency and buildings to meet its Energy Carbon Neutral Target by 2025.

The low voltage network comprises underground low voltage cabling and distribution equipment within buildings. The condition of this infrastructure is mixed and depends on the age of building and date of installation. As part of the focus on rejuvenation, uplift and life cycle renewal, low voltage infrastructure will be replaced.

7.6.3 Communication Services

The communications services referred to are the physical cabling and conduit infrastructure that carry the data network and telephone services provided internally by University IT. The Crawley and Nedlands sites are serviced by multiple carriers delivering fibre and copper services to various distribution nodes on the sites. This arrangement provides a high degree of resilience for the site. In general, the condition and capacities of the fibre and copper service are acceptable.

7.6.4 Security Services

The security services infrastructure encompasses the technology deployed to support the physical and operational elements required to create a safe and secure environment. Most buildings on campus have Electronic Access Control Systems on the external doors. The campus has very limited and inconsistent external Closed Circuit Television System coverage. Furthermore, some cameras and video recorders are approaching the end of their economic life.

7.6.5 Hydraulic Services

The hydraulics' services infrastructure comprises the following services:

- mains (potable) water
- fire service
- sewer
- stormwater
- natural gas
- other reticulated gases

7.6.6 Irrigation Services

The irrigation services infrastructure comprises irrigation of turf and garden beds from groundwater. There are some areas of irrigation from mains water, however, this is minimal.

The University is operating within its groundwater license allocation stipulated by the Department of Water and Environmental Regulation. Although there is currently no charge for groundwater, some improvements in water efficiency are recommended for environmental reasons, in line with the Environmental Sustainability Strategy.

7.6.7 Fire Services

The fire services infrastructure consists of a hydraulic component (firefighting water for hydrants) and an electrical component (detection and occupant warning system). The Fire Services section covers the electrical component.

The fire services infrastructure (electrical) consists of a detection and occupant warning system which includes:

- fire indicator panels
- fire alarm monitoring system

7.6.8 Building Management System

The Building Management System is highly effective in the automated monitoring and operation of several services, including critical services, and includes the following services:

- mechanical services (operation of chilled water network, load shedding of mechanical services during periods of peak electrical load, temperature control within buildings and metering of chilled water usage)
- electrical services (operation of pedestrian lighting and flood lighting, metering of electricity use in buildings, monitoring of some -80°C freezers in research laboratories)
- irrigation services (operation of bore pumps and solenoid valves, metering of ground water use)
- hydraulic services (metering of mains water use in some buildings) and metering of gas use in some buildings)
- fire service (monitoring of alarms)
- security service (interface with Electronic Access Control System)

8.0 FURTHER CONSIDERATIONS

Architecture and Built Form

The Crawley campus is considered one of the most beautiful in the world and since its establishment great care has been taken to prepare periodic development plans to establish principles to underpin the quality of the campus. The architecture and built form principles and recommendations will be updated to reflect contemporary needs and amenity.

Heritage and Conservation

The Crawley campus is renowned for its heritage architecture and landscaped grounds. The Crawley Campus Conservation Management Plan 2008 will be updated to include development over the last decade.

Landscape, Public Realm and Biodiversity Plan

Much of Crawley's exceptional nature has nothing to do with its architecture. Its location alone – on the banks of the Swan River, and with the green fringe of Kings Park to the north-east – is one of the most exceptional university settings the world over. The 2020 Masterplan provides a framework for the campus to integrate its eastern boundary with the river's edge and replenish its tree canopy and a Biodiversity Plan is currently being finalised to support this endeavor.

Activation

Campus activation has become an increasing focus for student engagement in the last decade, emerging from the longer-established idea of placemaking. The development of a master program of activities across the campus and an infrastructure and furniture or hard landscape guide is recommended.

Consolidation Plans associated with Academic Activity

Accommodation plans for schools, research and education infrastructure to be developed to enable the planning for consolidation of institutional activities from surplus sites.

Space Policy and Management Guidelines

Space should be rationally allocated based on the need for physical capacity to support the teaching, research, administrative and income-generating activities of the University and it should be re-allocated as priorities and capacity requirements change. A Space Policy and Management Guidelines will be developed.

Sustainability Plan and Governance

There is increasing expectation by current and future staff and students for the University to demonstrate its awareness of its sustainability responsibilities. There is also a greater requirement on reporting of its social and environmental impacts. In terms of the Campus Masterplan, sustainability principles are embedded throughout its planning. This distils down to the planning and design of its infrastructure and built forms, reflected in the Integrated Infrastructure Strategy and Design and Construction Standards. More explicitly, environmental sustainability principles are articulated in the Environmental Sustainability Strategy. This Strategy will be an opportunity for the University to showcase its environmental commitments as well as invite collaboration in its environmental initiatives.

For the greater University, there remains an opportunity to consolidate and celebrate the extensive work in sustainability that the University engages in. This requires a governance structure with high-level representation from all sectors of the University.

Services Infrastructure Review

UWA's services infrastructure is of varying age and condition, with some services requiring upgrades due to capacity, obsolescence or poor condition. For example, the chilled water system is at capacity and there is currently a set of projects underway to address this shortfall on the production as well as demand side. An updated Integrated Infrastructure Strategy is being developed which will take into consideration the Masterplan developments (demands of the campus) as well as the Environmental Sustainability Strategy (reduction or load balancing strategies). The Integrated Infrastructure Strategy will encompass all building services including mechanical, electrical, hydraulics, communications, fire and building management and will be developed with the assistance of engineering consultants.

COVID-19 – Plan for a Sustainable Recovery

COVID-19 has had a devastating effect globally, however, has provided opportunity to consider improvements through the way we use and operate our physical and digital environments. Considerations for exploration include:

- agile workforce opportunities with potential reduced demand for gross floor area, operating costs, parking and transport.
- increased digital learning opportunities with potential change in type and size of teaching spaces required.
- teleservice offering for key services including medical advice.
- research in line with government funding and humanitarian focus, e.g. biosecurity/bio-containment requirements.
- knowledge sharing through enhanced digital environment and smart campus.
- reduced travel enabled through virtual conferencing reducing environmental impact.
- built form planning and design for connection with natural environments, lower density, improved wellbeing, sharing.
- support for local industries and reduced global dependencies.
- focus on natural resources and sustainable consumption and production.
- contingency Planning. Preparedness. Responsiveness. Coordinated responses. Long-term thinking.
- review humanitarian and welfare programs undertaken during COVID-19 pandemic and continue efforts in this space.
- focus on greater financial resilience, e.g. releasing under-utilised assets, diversification of product, and collaboration with industry to generate income.
- greater focus on alternative forms of transport in lieu of public transport. Provide high quality, suitably located facilities to support alternate forms of transport such as end-of-trip facilities.





