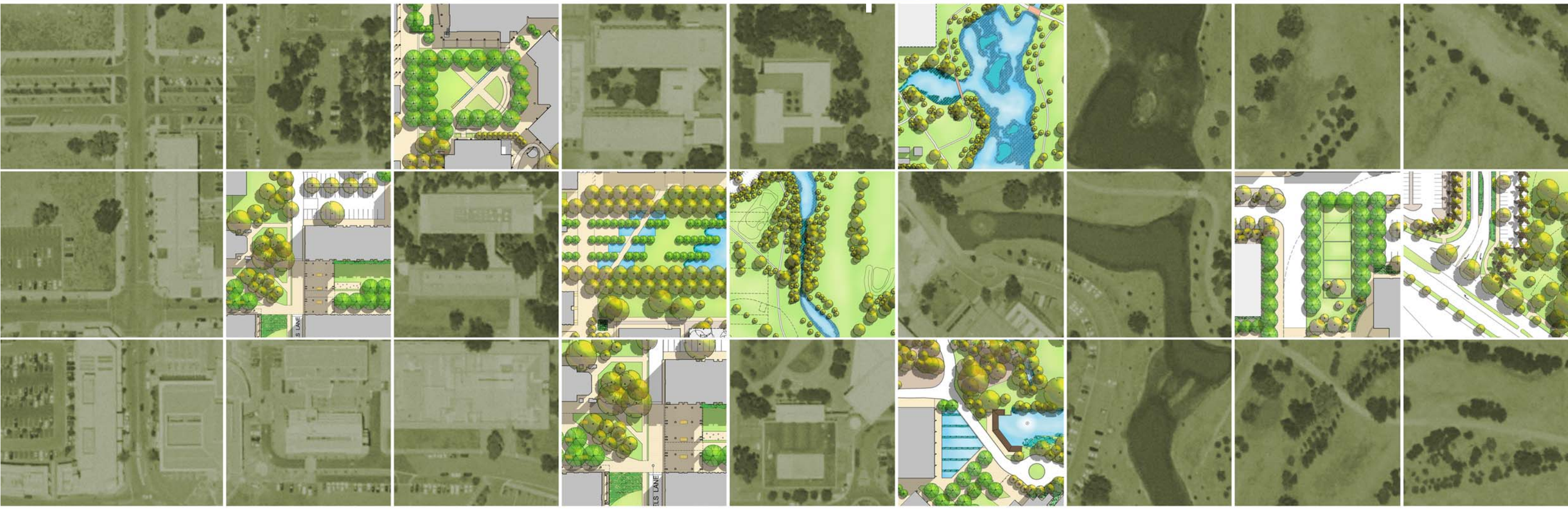
Mawson Lakes

University of South Australia

Mawson Lakes Campus



June 2006

Landscape Masterplan

University

UniSA

Taylor Cullity Lethlean

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Introduction

The University of South Australia Property Unit commissioned Taylor Cullity Lethlean to prepare a Landscape Masterplan for the Mawson Lakes Campus in 2005. This commission was partly prompted by the preparation of the Mawson Lakes Campus Masterplan 2002-2010, prepared by Denton Corker Marshall in 2003. The Campus Masterplan established the broad framework within which individual landscape, refurbishment, building and facility projects can be undertaken. The Landscape Masterplan addresses areas of campus beyond the building footprint: paths and walkways, planted areas, courtyards, site furniture, building entries, and waterways.

The Mawson Lakes Campus is set within a rapidly developing district in the northern suburbs of Adelaide and this is a major context and influence for the Landscape Masterplan. The immediate context includes the development of the suburb of Mawson Lakes, which includes Mawson Town Centre immediately adjoining the campus, a new rail - transit interchange serving Mawson Lakes and the campus, and the realignment and overpass for Mawson Connector (road) that runs on the northern boundary of the campus.

The Mawson Lakes Campus Masterplan 2002-2010 identifies a series of additional buildings on the campus to accommodate relocated academic programs resulting in an increase in student and staff numbers and requiring additional teaching and research space. It includes approximately 16 projects. The Mawson Centre building, providing facilities for both the University of South Australia and civic and community facilities for Mawson Central, along with a major extension to the University library, have been completed.

The Landscape Masterplan builds on and complements the framework provided by the Campus Masterplan. Based on an identified hierarchy of landscape components and principles the Landscape Masterplan includes more specific precinct plans for key areas of the campus landscape.

Consultation with stakeholders and interest groups was undertaken in the preparation of the plan. The Landscape Masterplan Reference Group provided direct feedback and input and was pivotal in its development. The Campus Advisory Group was consulted on two occasions to review key stages of the preparation of the Landscape Masterplan.

This document should be read in conjunction with the Mawson Lakes Campus Masterplan 2002-2010. It provides a framework against which future projects may be assessed and provides direction and focus for the further development of the campus landscape. Some design solutions will stem almost directly from the Landscape Masterplan but will generally require more specific and detailed design development. Additionally, the individual precinct plans offer a more detailed framework for selected ‘priority’ areas across the campus.

This landscape masterplan aims to achieve a renewed fresh landscape, strengthening the image and amenity of the whole campus as an integral aspect of the future of Mawson Lakes Campus. It provides a framework whereby the use and enjoyment of the campus will contribute positively to peoples’ experiences and appreciation of their time on campus. Buildings and landscape are integrated to form a series of precincts that are visually attractive, well articulated physically, convenient for users, impart a sense of place and encourage use, enjoyment and interaction.

Mawson Lakes Campus University of South Australia, 2006

Outline of Methodology

The methodology adopted for the preparation of the Landscape Masterplan, based on the phases outlined in the brief, adopts an iterative process whereby each stage of the process was reviewed and evaluated with the Landscape Masterplan Reference Group (LMRG) and Campus Management Group (CMG) thereby maximising opportunities for creative discussion and feedback, thus enhancing the quality of the final master plan.

1.0 Phase One: Review and Consultation
For the initiating phase, the relevant base plans and Campus Masterplan reports were reviewed and an initial site inspection was undertaken with members of the Landscape Masterplan reference group.

Existing campus landscapes were documented in a series of site analysis diagrams that address: vegetation, views, spatial character, pedestrian and vehicle movement.

The site analysis material was presented to and reviewed by the LMRG and CMG.

2.0 Phase Two: Landscape Principles
The site analysis process suggested important changes or redevelopment opportunities for the campus landscape. As a means of focusing on key aspects, a series of Landscape Principles were developed:

- Provision of formal and informal spaces;
- Utilisation of visual and pathway connections to the background park landscape;
- Emphasis on a hierarchy of spaces;
- Provision of gathering nodes;
- Integration of the campus landscape with its context.
- Making provisions for vehicles and pedestrians;
- Retention and augmentation of the planting canopy.

Landscape Structure and Hierarchy
The forgoing site analysis and Landscape Principles were developed into a series of identifiable and integrated design ideas, expressed as structure and hierarchy, so that rather than being conceived as ‘left-over green areas’ the elements of the landscape together form the Landscape Masterplan.

The elements of the landscape are:
Spines, Courtyards, Hubs, Entrances, Informal Spaces, Water, Town Connection, Parklands, and overall Hierarchy.

The Landscape Principles, Landscape Structure and Hierarchy and draft Landscape Masterplan were presented to and reviewed by the LMRG and CMG.

3.0 Phase Three
Development of Campus Landscape Masterplan, Precinct Plans, Preferred Planting List, Furniture and Lighting Schedules.

The draft Campus Landscape Masterplan, draft concepts for each precinct, draft plants list, and draft furniture and lighting schedules were presented to the LMRG and CMG. Preliminary cost indications for precincts were prepared.

Introduction

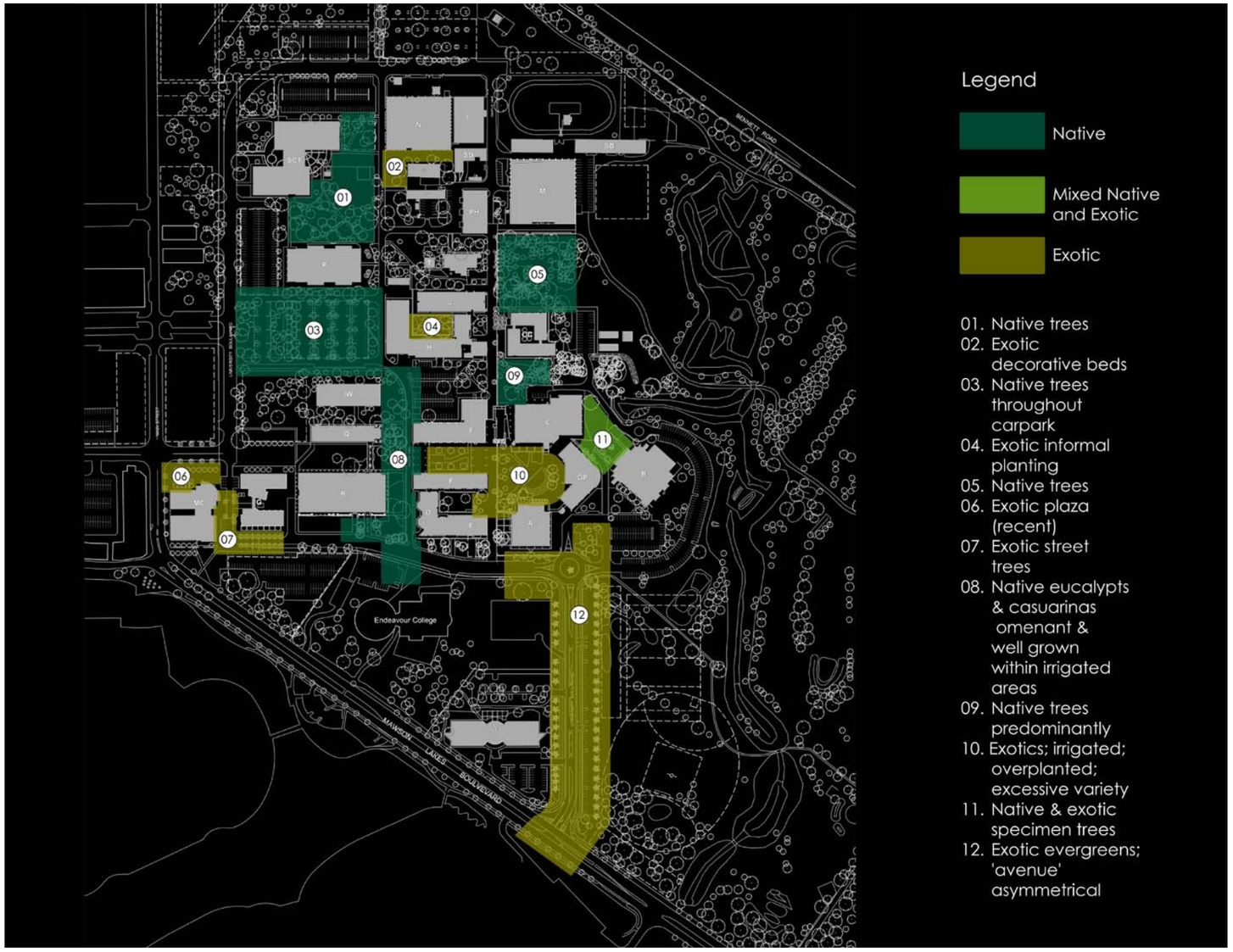
Landscape : Site analysis

As an initial response to the existing campus landscape, an appraisal of the landscape of the site in the form of a series of site analysis diagrams highlights the general landscape character of the campus. These diagrams outline the character of the campus landscape and point towards retention and augmentation as well as suggesting important changes or redevelopment opportunities.

Vegetation

Existing parkland vegetation

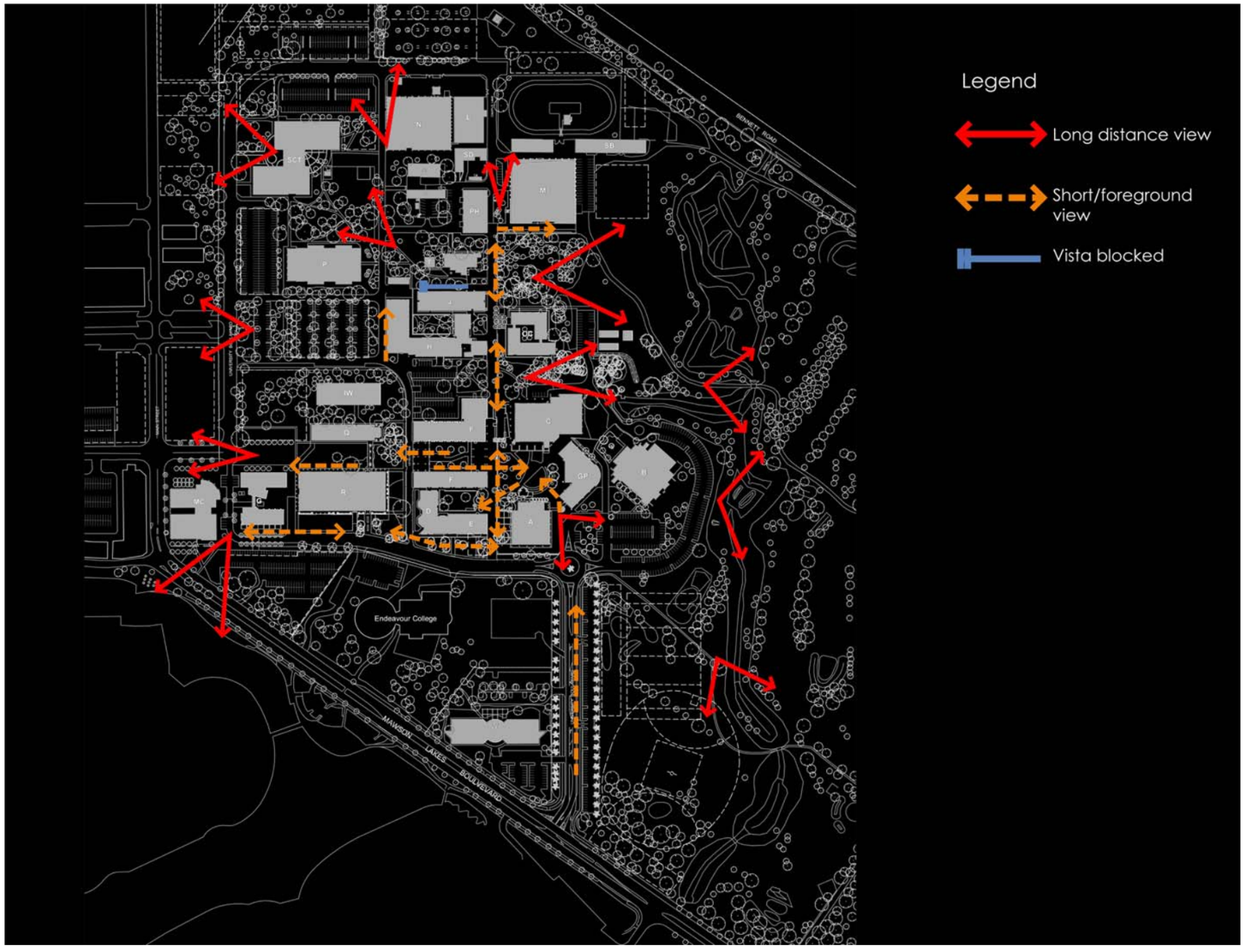
Vegetation: the general pattern of existing vegetation indicates that the campus benefits from a range of exotic and native trees and shrubs that can form the basis for further development of amenity planting. There has been considerable trial and error in species selection, much of which is successful in dealing with adverse soil and ground salinity. There is extensive use of native species along with appropriate exotic species. A detailed appraisal of the existing planting is included in Appendix 1.



Views

Vista from campus towards Mawson Town Centre

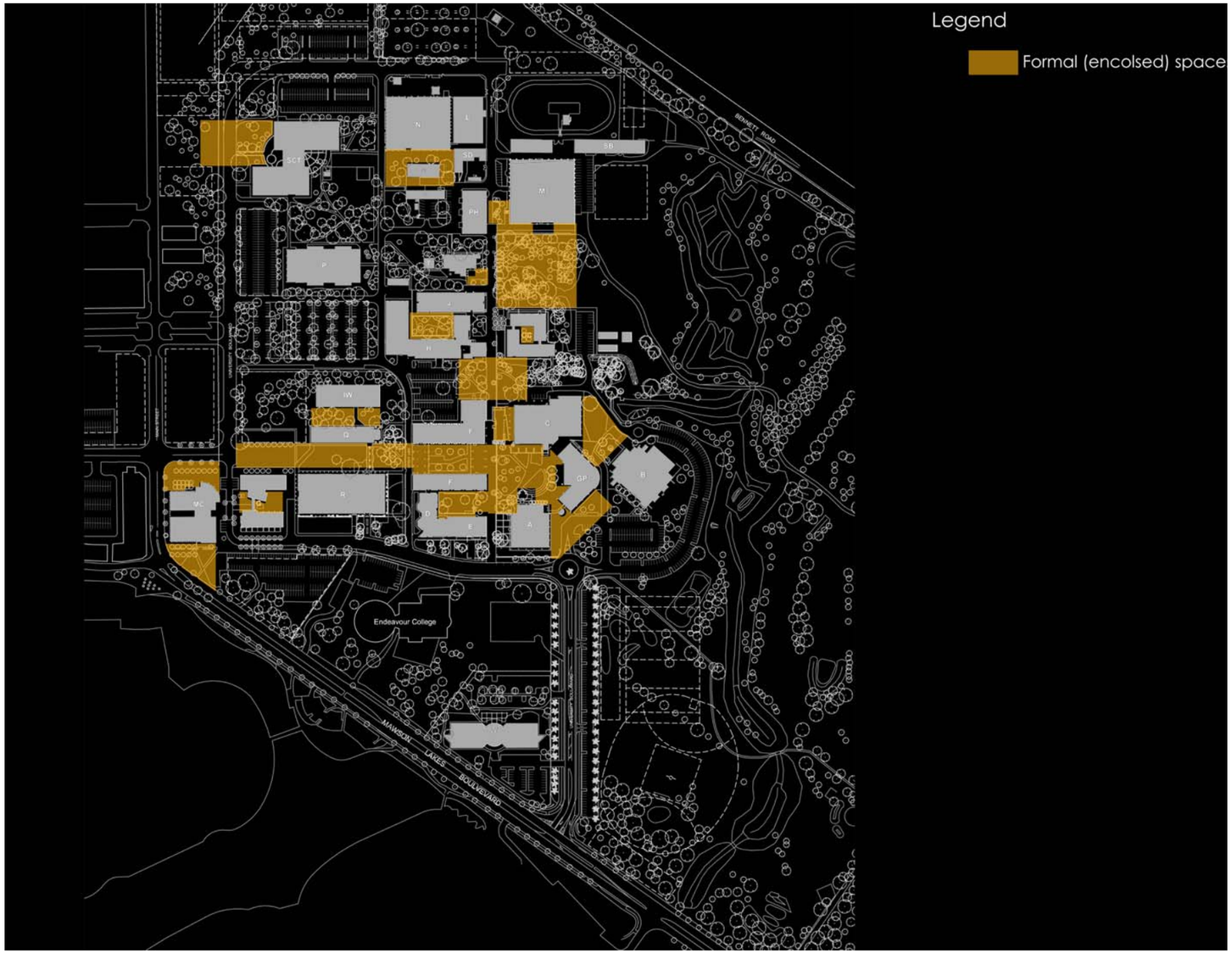
Views: the opportunity for long distance panoramic views is somewhat limited on the campus, the best being views of the wetlands and golf course from the northern section of University Walk. On the other hand, there are many pleasing short / foreground vistas that can be further developed.



Spatial Character - Formal Enclosed Spaces

Enclosed space

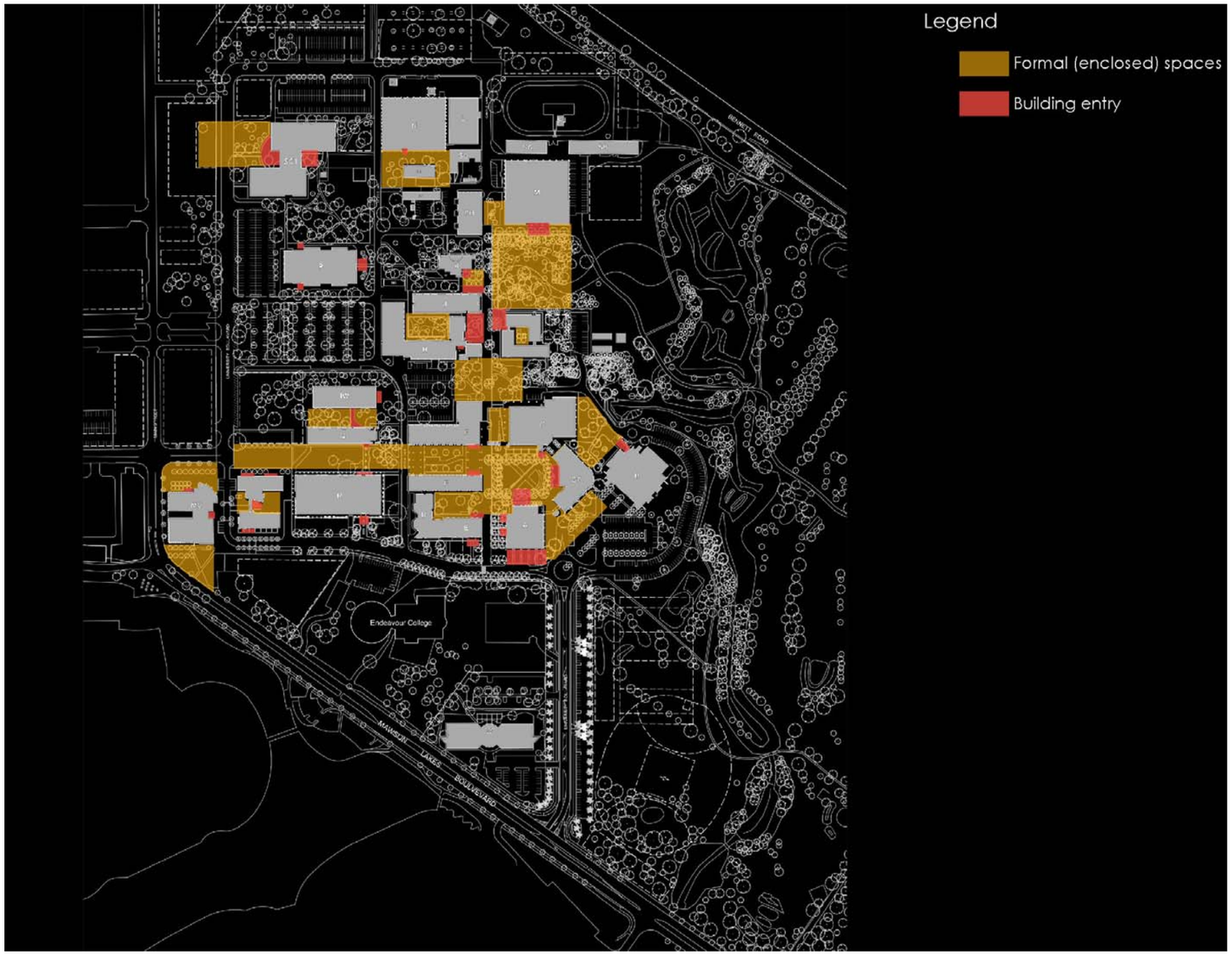
Formal enclosed spaces: the configuration of the buildings frequently provides interstitial spaces that provide enclosure, a sense of place and human scale. These spaces tend to have a formal, regular appearance and include paths and building entries. The planting tends to occupy or fill these spaces, detracting from rather than reinforcing their character. There are more of these spaces towards the southern end of the campus which suggests more may be appropriate for the developments proposed in the north sectors of the campus.



Spatial Character - Building Entry

Entrance view

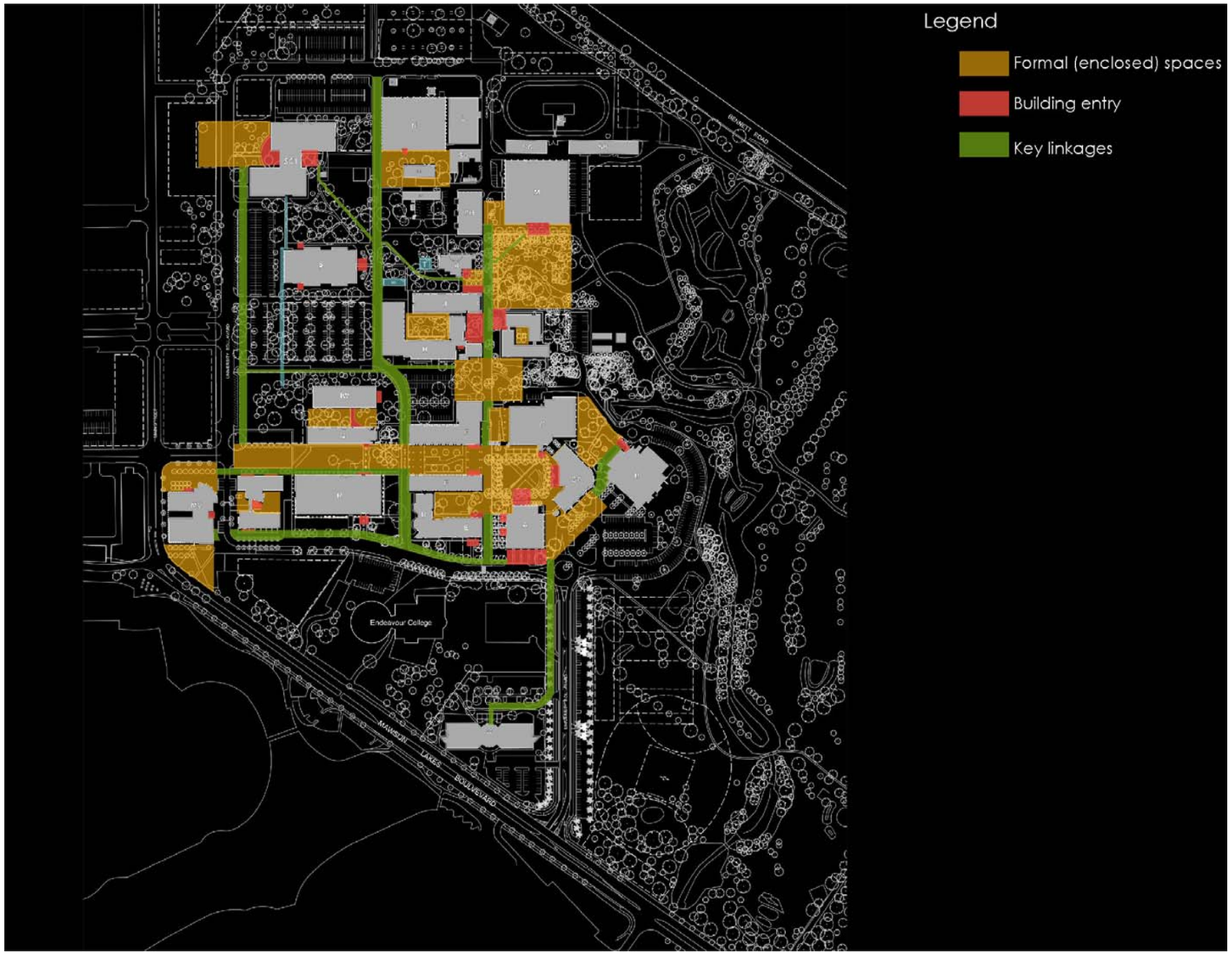
Building Entry: generally the buildings at Mawson Lakes Campus are separated island entities rather than forming interconnected networks. Each building consequently has one or more 'address' points as a main entry and as well there may be several secondary points of entry to the building. These locations potentially provide a sense of address and orientation as well as an opportunity for informal rest / meeting areas.



Spatial Character - Key Linkages

University walk

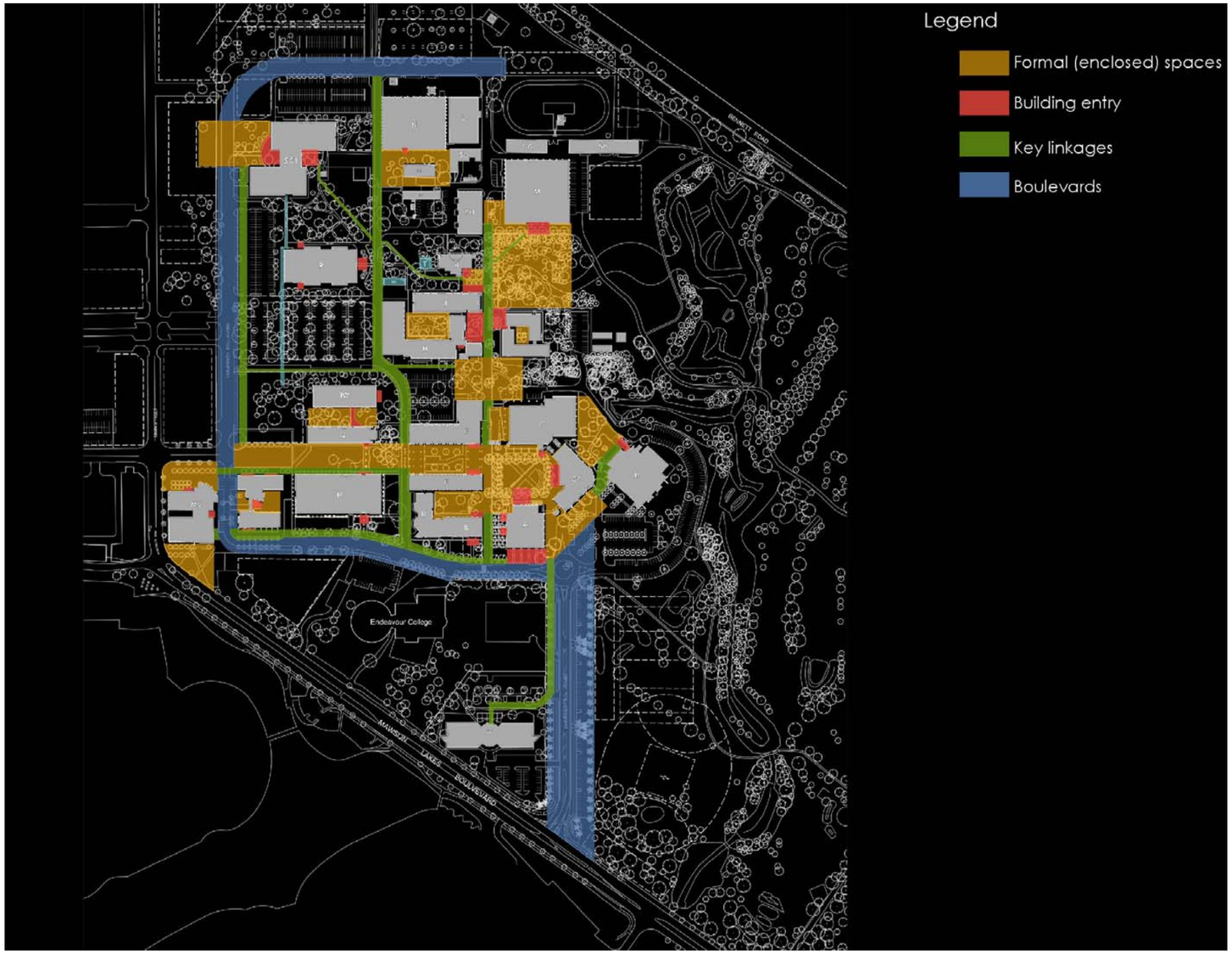
Key linkages: pedestrian circulation as well as vehicle access within the campus area is an important aspect of how the campus is experienced by students, staff and visitors. The general pattern of pedestrian circulation is aligned north-south or east-west, with some diagonal links, frequently utilising informal pathways. These linkages form the backbone of public spaces within the campus.



Spatial Character - Boulevards

University Boulevard

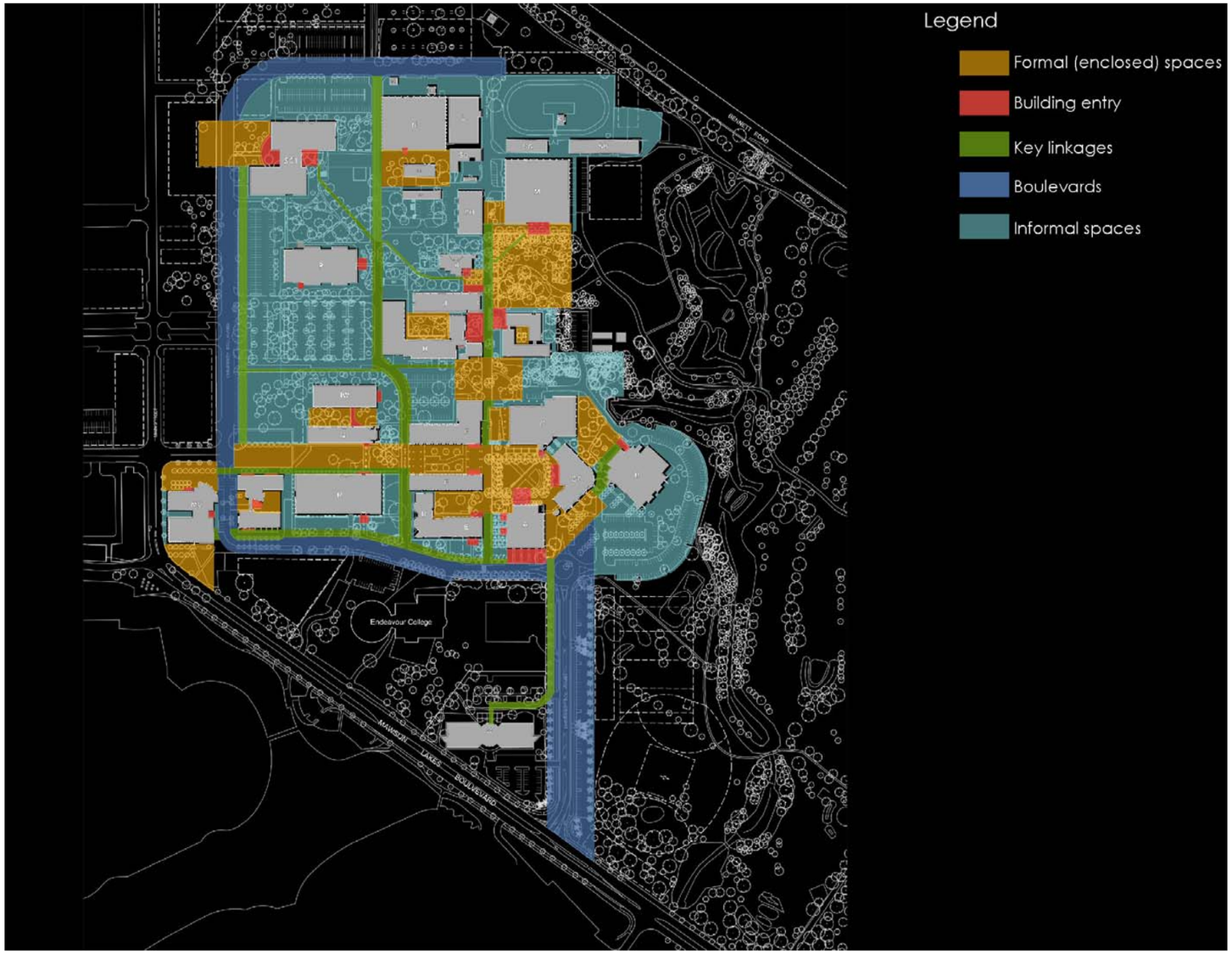
Boulevards: the vehicle circulation on the campus was traditionally via University Boulevard, running from Mawson Lakes Boulevard and then along the south, west and north edges of campus. Indeed in very early campus design, there was a complete encircling of the campus by a peripheral road. With the development of Mawson Central, there will be alternative vehicle access routes via the town centre; none the less, University Boulevard remains as the primary formal entry avenue.



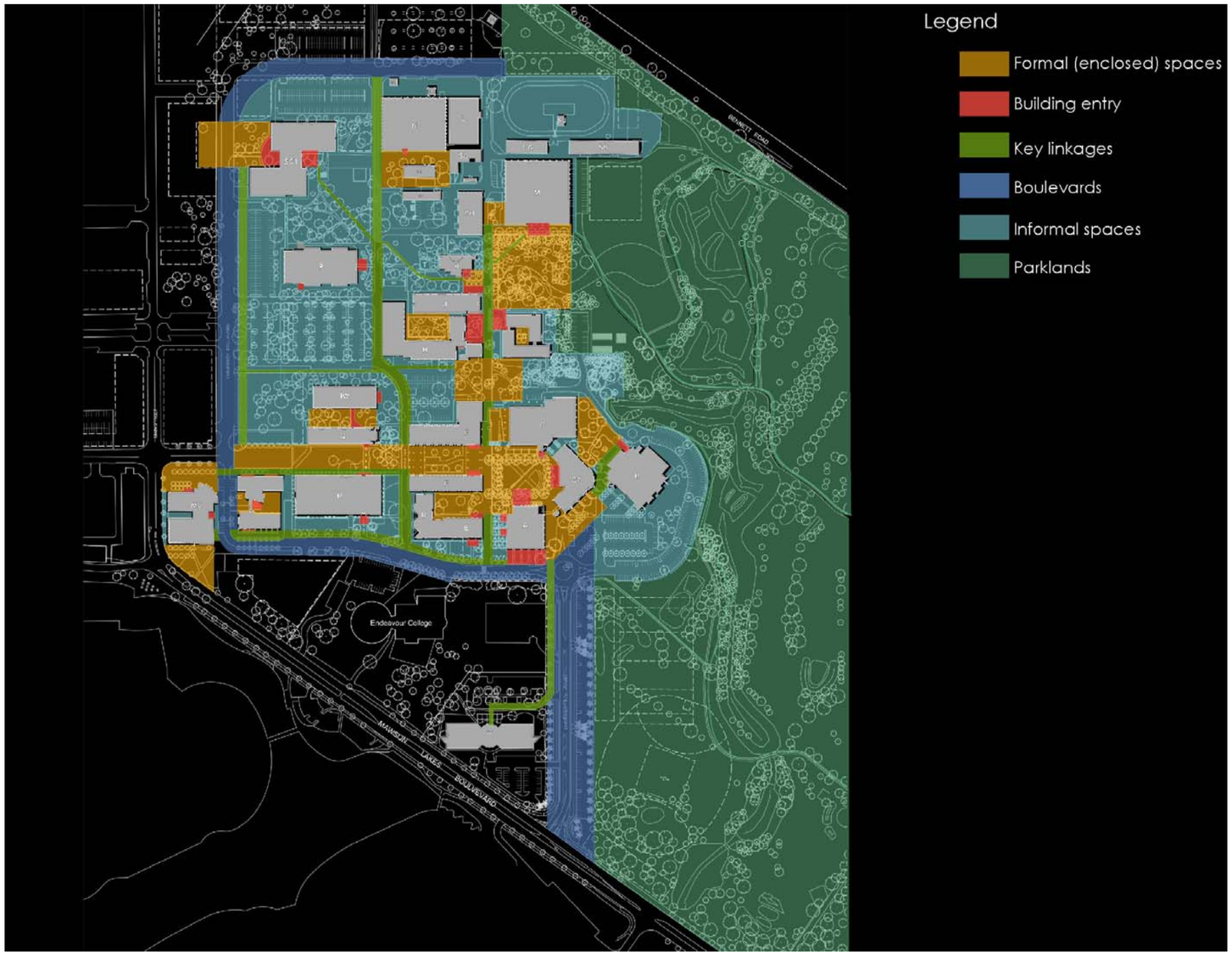
Spatial Character - Informal Spaces

General public space

Informal Spaces: beyond the more formal areas of the campus mentioned previously, there are extensive areas of more informal background landscape areas, which include carparks, and general open spaces. These spaces are quite extensive and generally have native tree planting.



Spatial Character

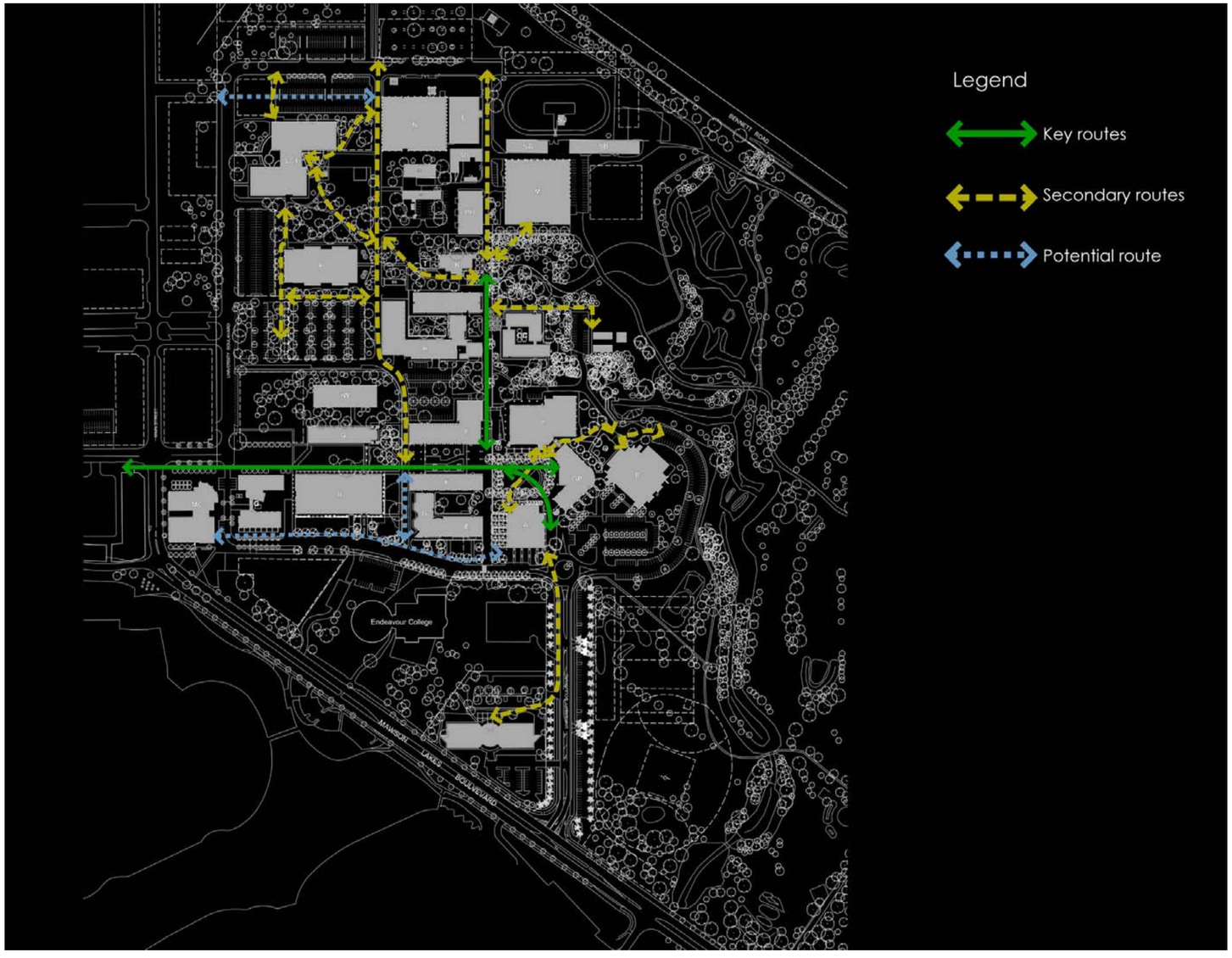


Parklands: the broader campus area includes extensive parkland areas including a golf course, sports fields and a wetlands watercourse. These areas have a distinct open character and are relatively separate, visually and physically, to the core campus built-up areas.

Movement - Pedestrians

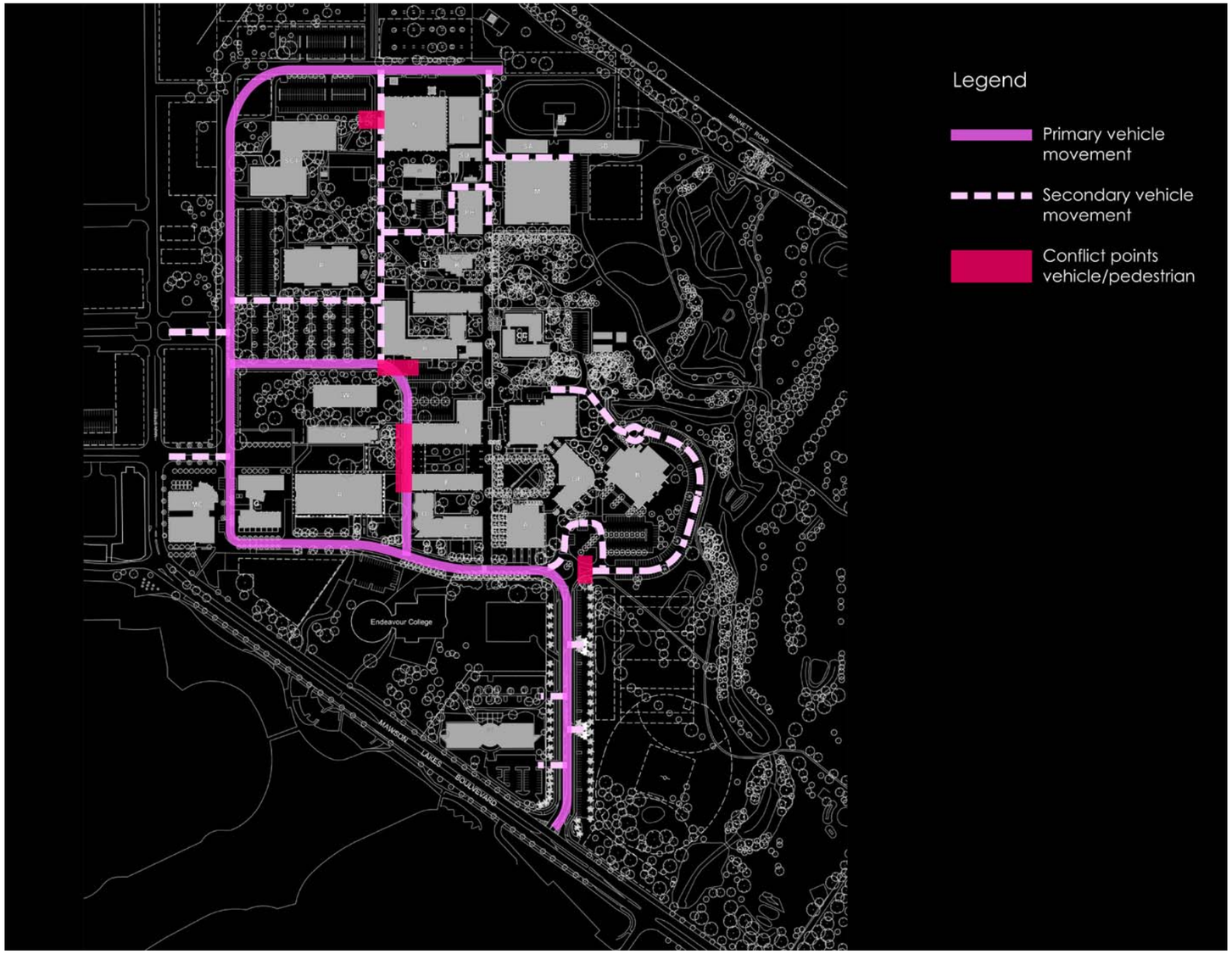
Formal walkway : University walk

Pedestrian Movement: both students and staff use formal and informal walkways to move between buildings on campus. This occurs throughout the day and is indeed one of the enlivening aspects of the campus. University Walk, running north-south is a key linkage but more recently, Town Walk linking east-west to Mawson Central, will likely become more important. Circulation to the bus drop-off adjoining building A, into the main courtyard and beyond, is also important.



Movement - Vehicles

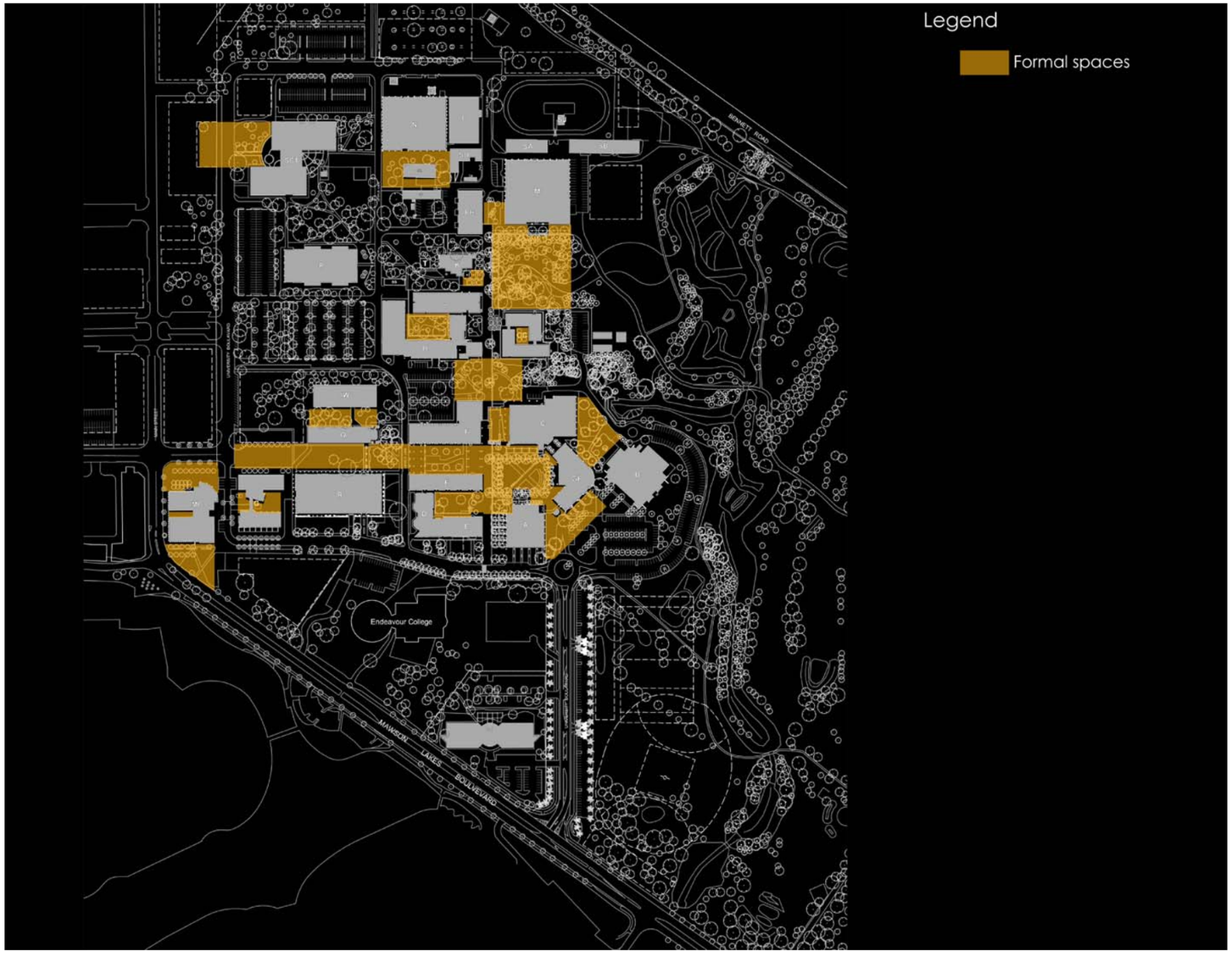
Vehicles: As well as University Boulevard, vehicle movement occurs on secondary streets that allow access to car parks and delivery points. Provision is also being planned for public bus set down and lay by at Building A. At four locations there is some level of intermix of pedestrian and vehicle movement.



Landscape Types - Formal Spaces

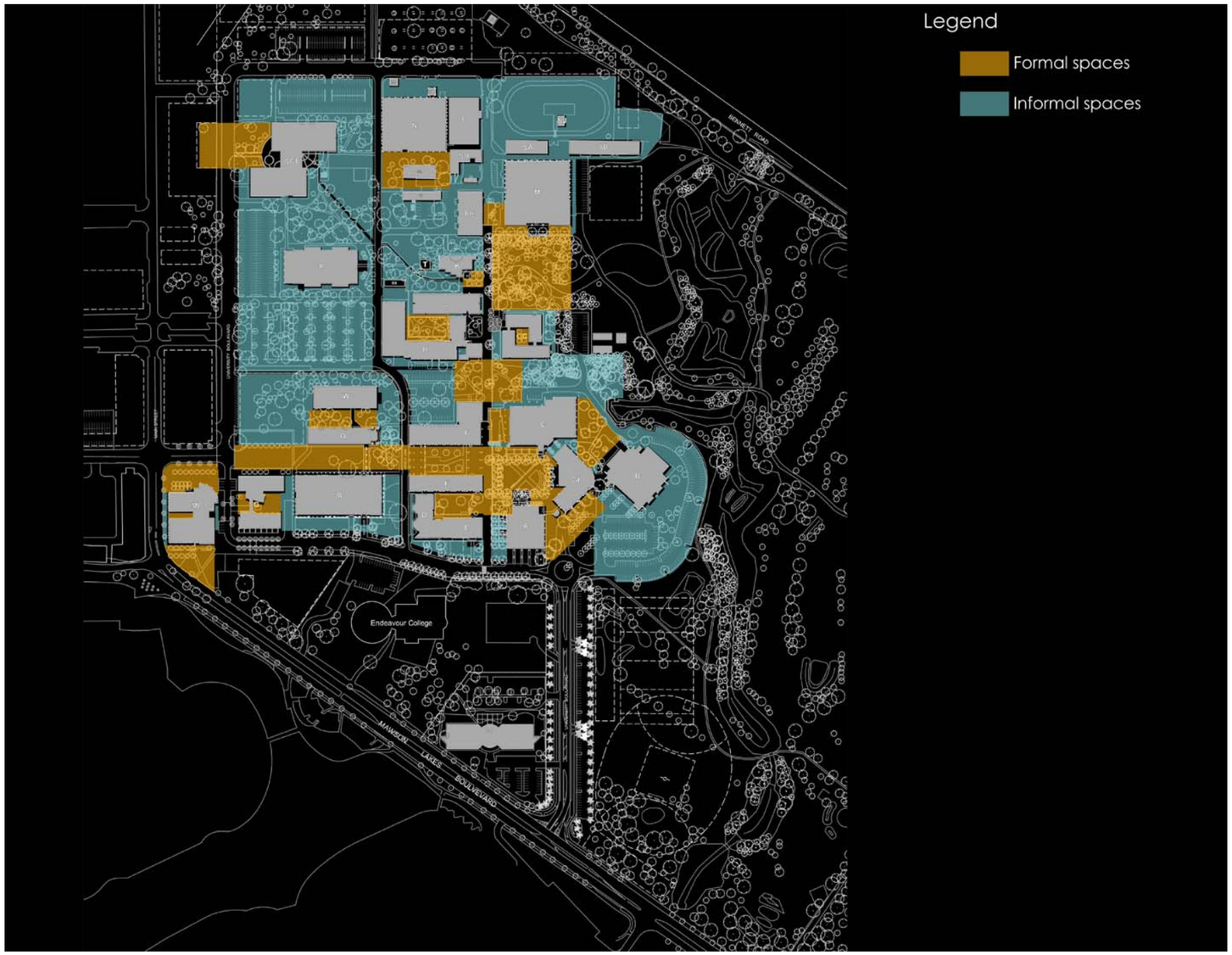
Landscape Principles
The general principles that that have been developed as follows arise partly from the forgoing site analysis but are also propositional statements that look towards the key areas and elements of the campus landscape.

Formal Spaces
Provide formal landscape spaces that form forecourts to buildings and provide a sense of organised space with a sense of enclosure.



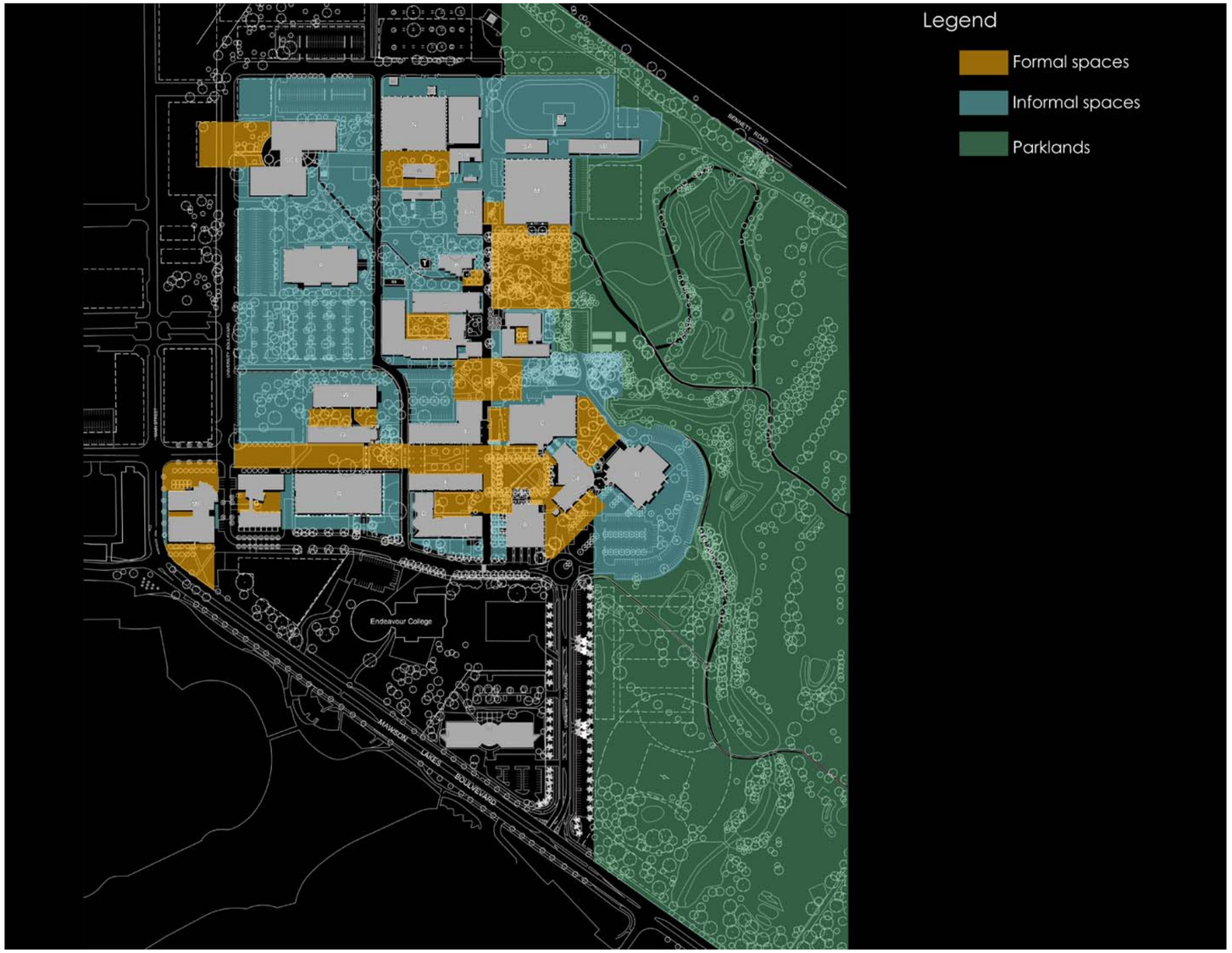
Landscape Types - Informal Spaces

Informal Spaces
Include informal landscape spaces that accommodate general background site uses such as pedestrian circulation and car-parking.

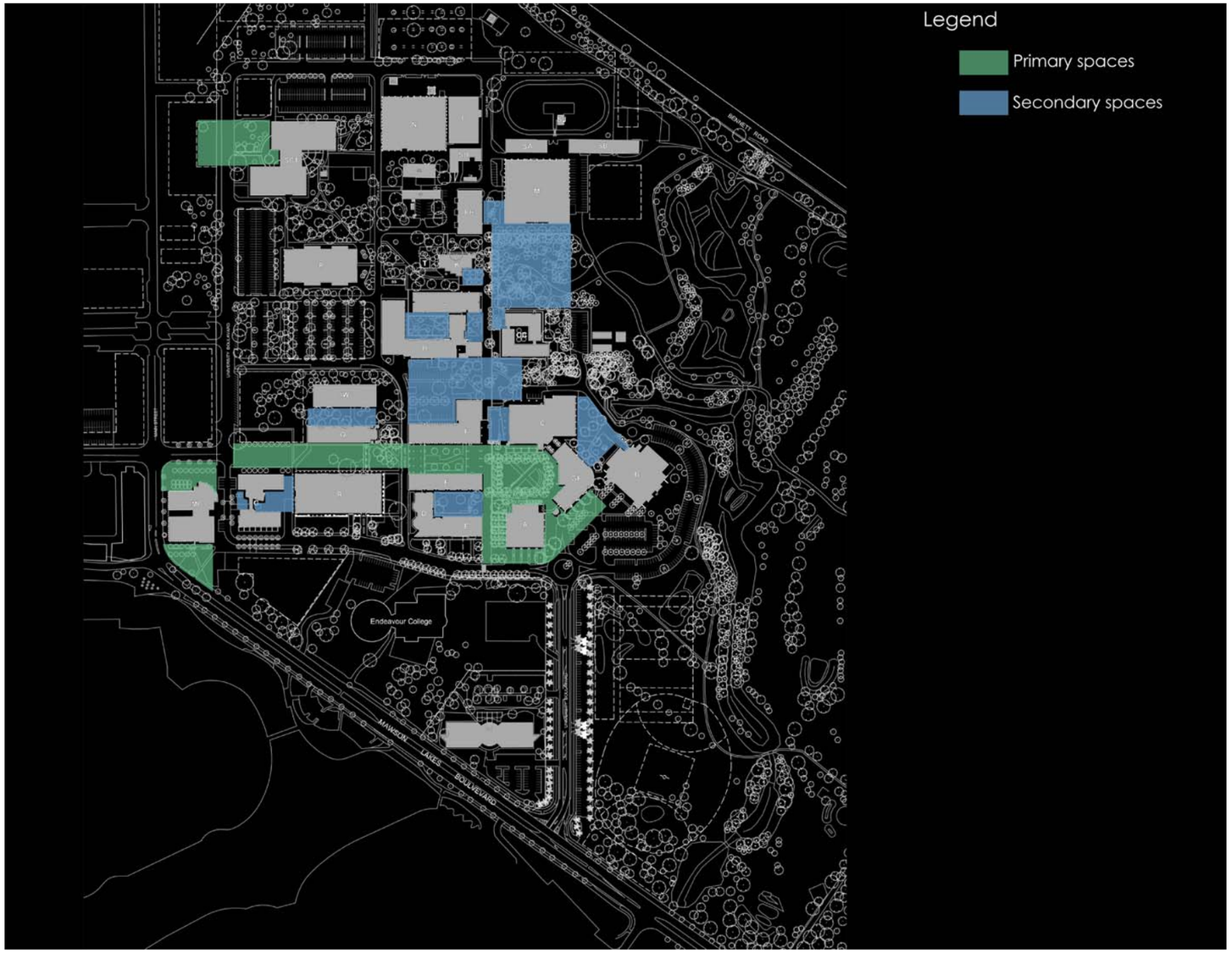


Landscape Types - Parklands

Parklands
Make a visual connection and utilise informal pathway networks for enjoyment of the wider background landscape.



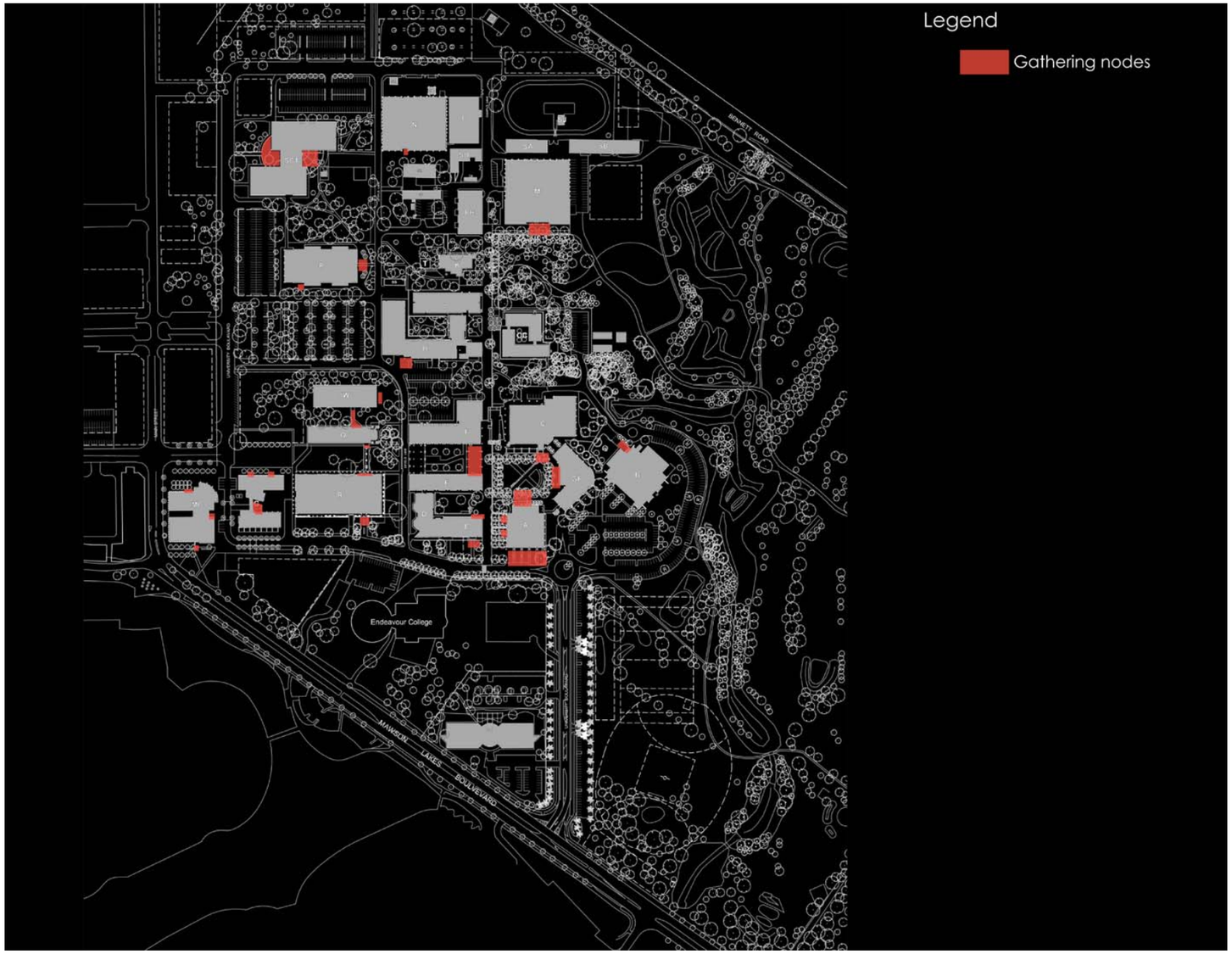
Hierarchy of Spaces - Primary & Secondary



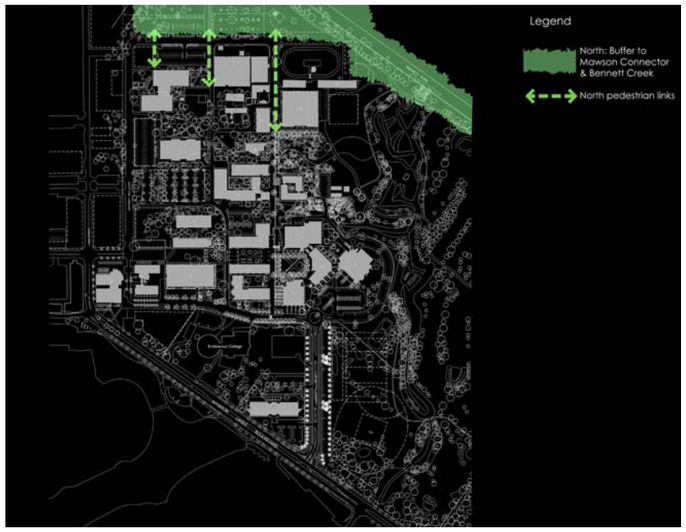
Primary and secondary spaces
The circulation spaces of the campus – areas with a predominance of active pathways, building entries and soft landscape suggest two levels of importance. The primary areas have higher levels of use.

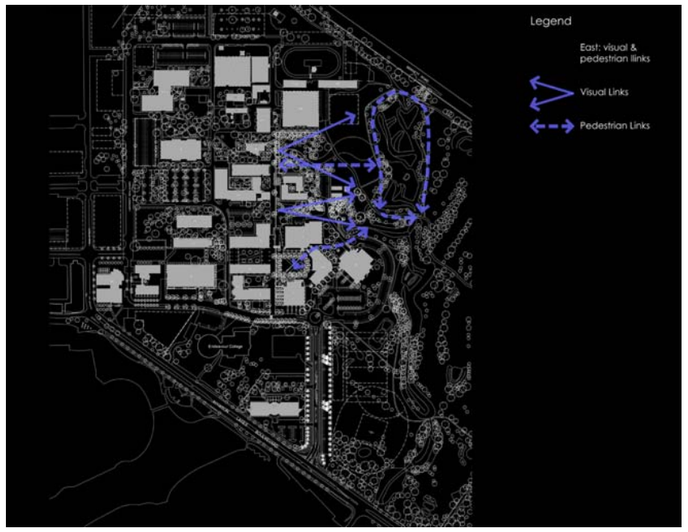
Gathering Nodes

Gathering nodes: provide a sense of address and orientation as well as an opportunity for informal rest / meeting areas by provision of informal areas adjoining building entrances.

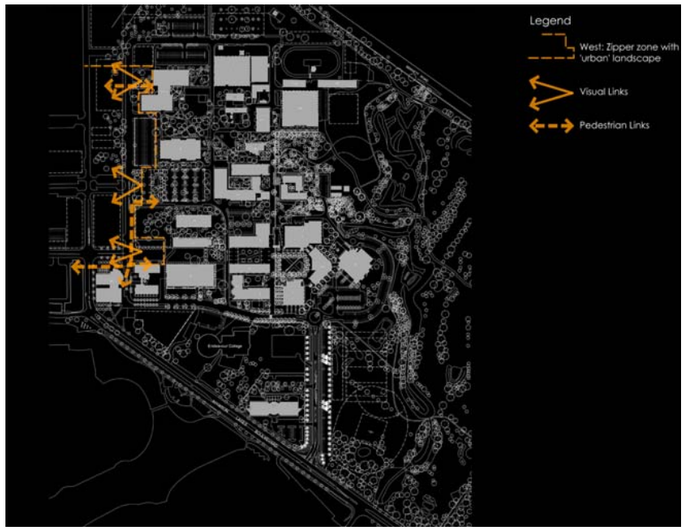


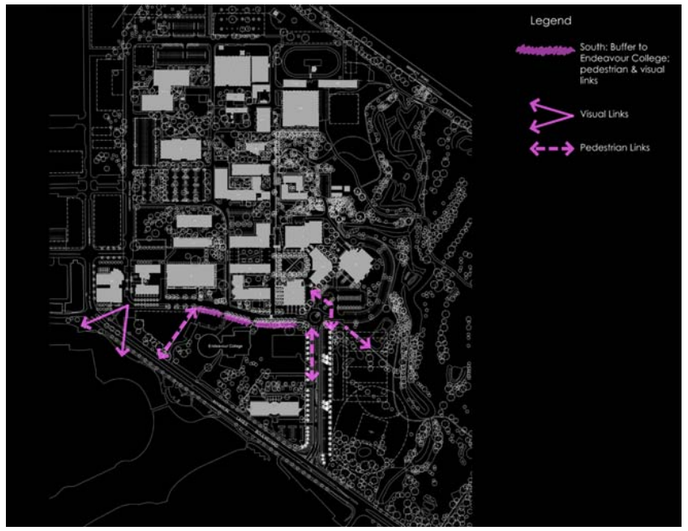
Integration with context



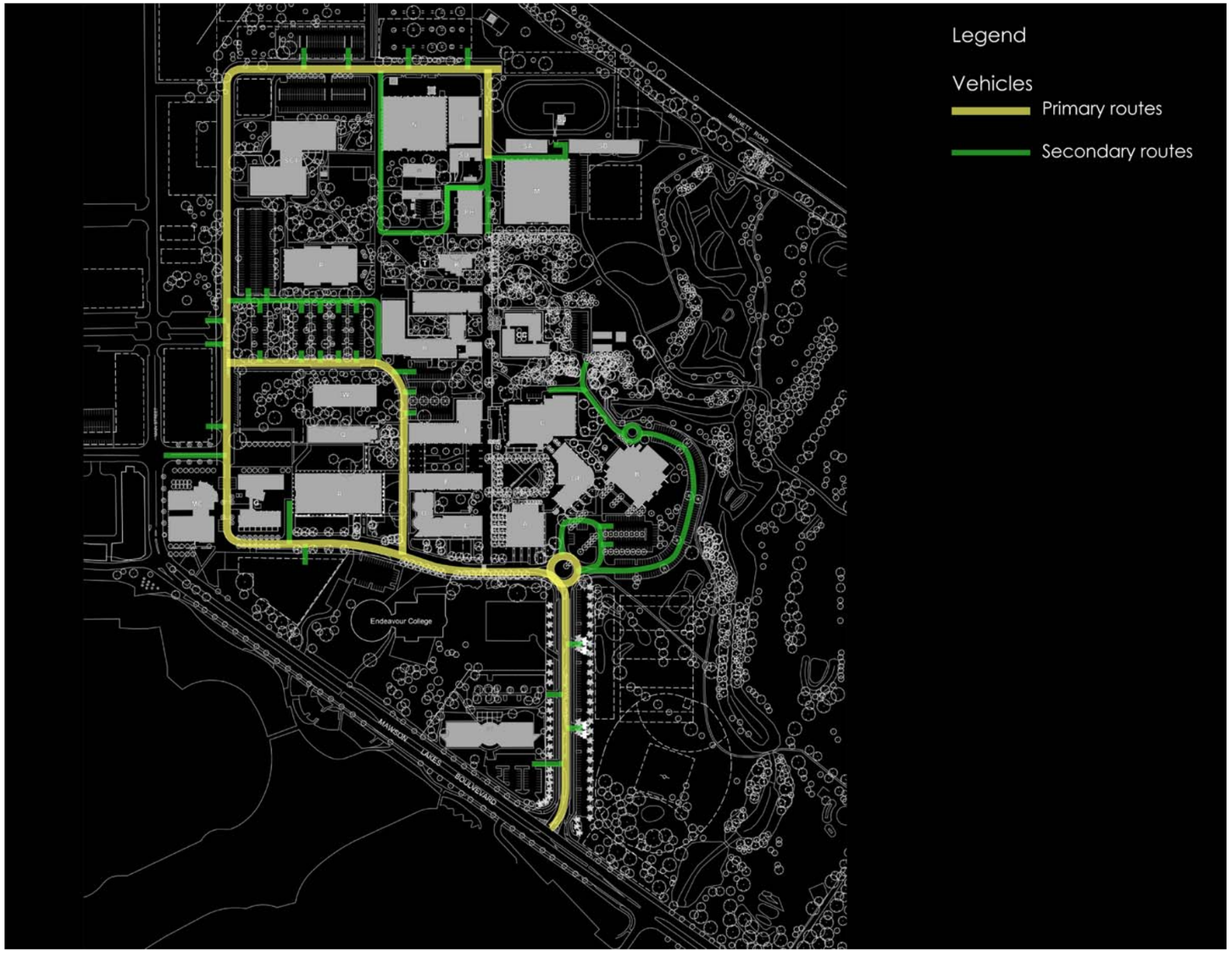


Integration with the North, East, West, South: provide strong visual and pedestrian links towards each adjoining boundary and beyond to adjoining areas so as to integrate the landscape physically and visually with its immediate context.



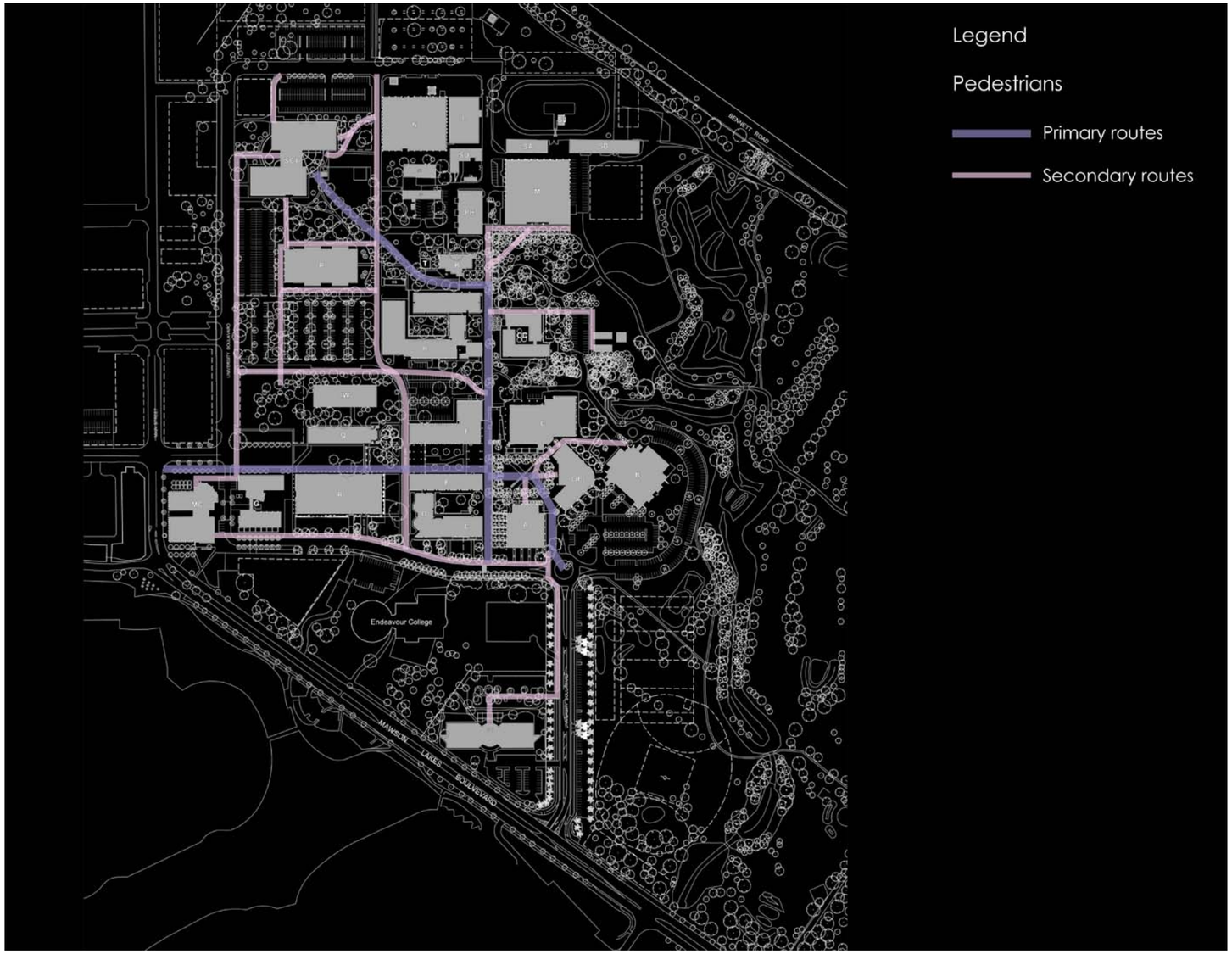


Heirarchy of Linkages - Vehicles



Vehicles: make provision for avenue streetscape to each section of University Boulevard and less formal streetscape on secondary streets that allows access to car parks and delivery points.

Heirarchy of Linkages - Pedestrian



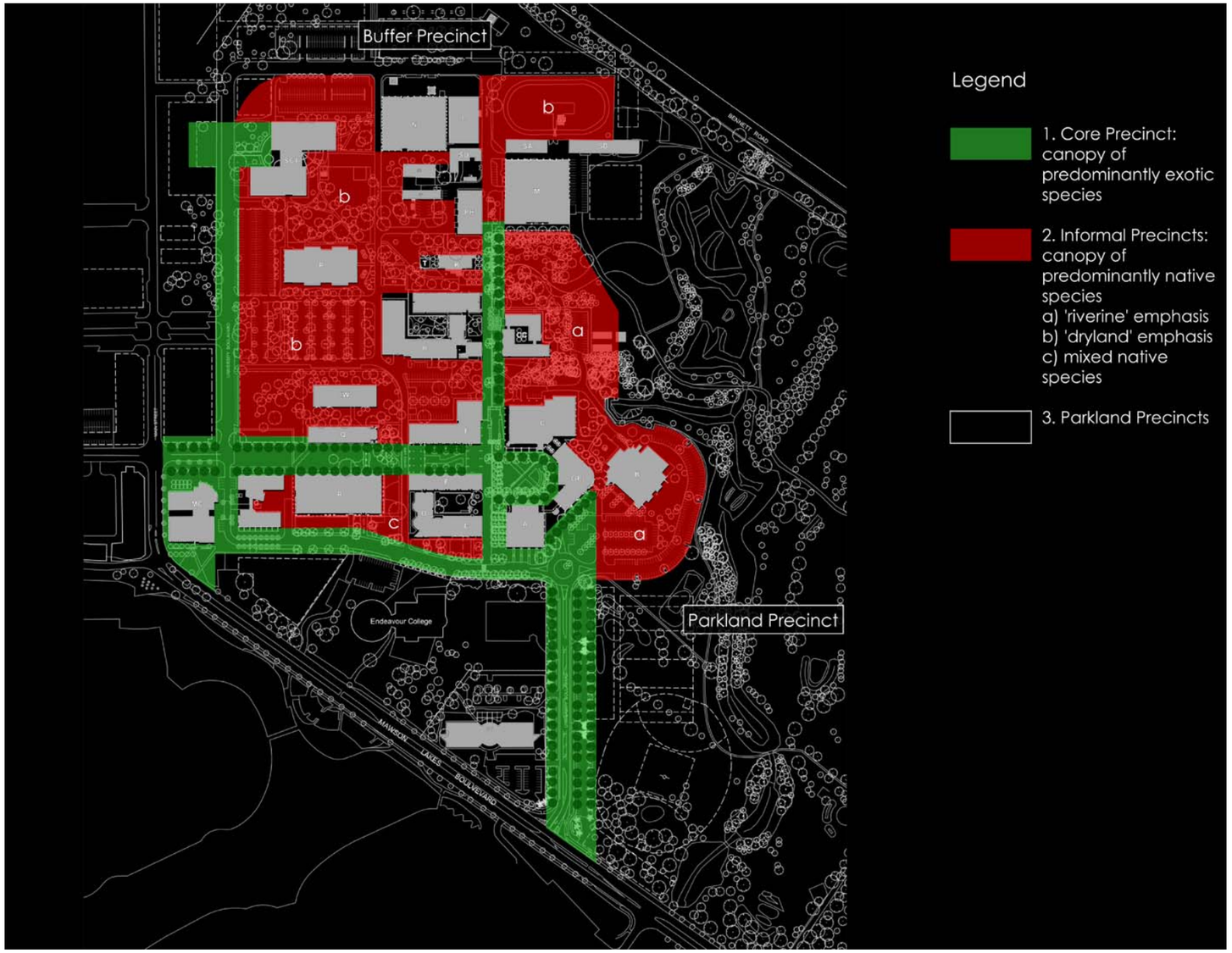
Pedestrian: provide both formal and informal walkways with high amenity and visual interest imparted through soft and hard landscape, including upgrading of University Walk and Town Walk. Circulation from the bus drop-off through GP courtyard and beyond, is also important.

Planting Canopy

Tall canopy trees provide shade and a sense of scale

Planting Canopy: retain and augment tree planting that provides shade and a sense of scale, differentiating between deciduous trees for Boulevards and Walks, native trees for general areas and parklands.

Recommended planting species are included in Appendix 2.



Landscape Structure and Hierarchy

The existing landscape at Mawson Lakes Campus possesses some degree of structure and hierarchy that arises from the disposition of existing buildings, walkways and car parks. The on-ground layout of buildings, pathways and car parks is highly influential on landscape structure and hierarchy, which affects amenity, sense of place and convenience. Overall, the existing landscape spaces tend to be rectilinear in form but irregular or random in terms of soft landscape. In some locations the soft landscape is overly fussy and too varied.

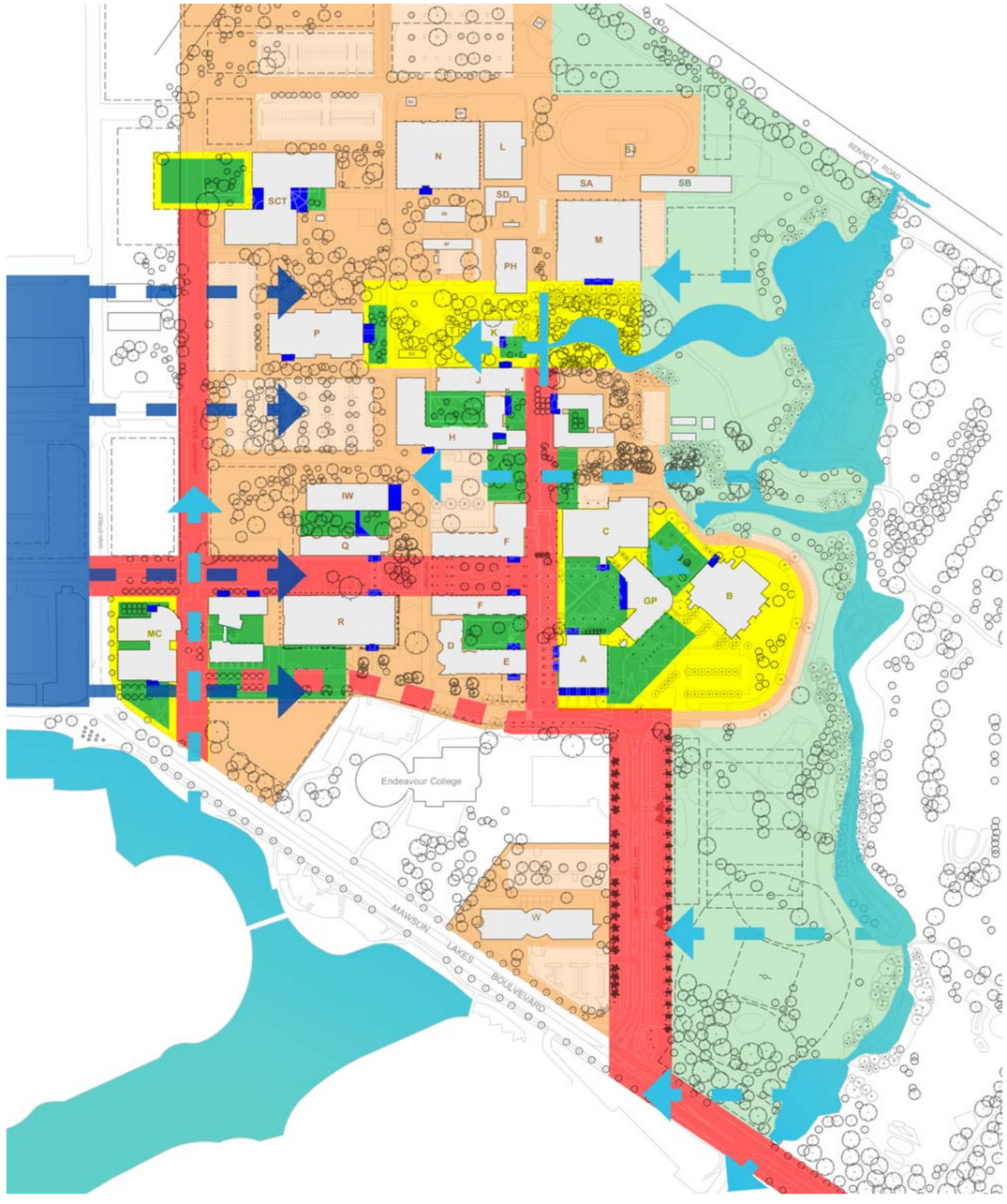
The overall legibility of the campus as a public space is not high in that while there are main pedestrian corridors (or potentially so) it is frequently not clear where to proceed once you leave those.

It is also apparent that the planting deployed across the site until recently has little by way of precinct themes, urban design structure or consistency, except for the extensive planting of eucalypt trees in car park areas. The potential to establish a recognisable pattern of canopy trees is one of the key proposals of the masterplan.

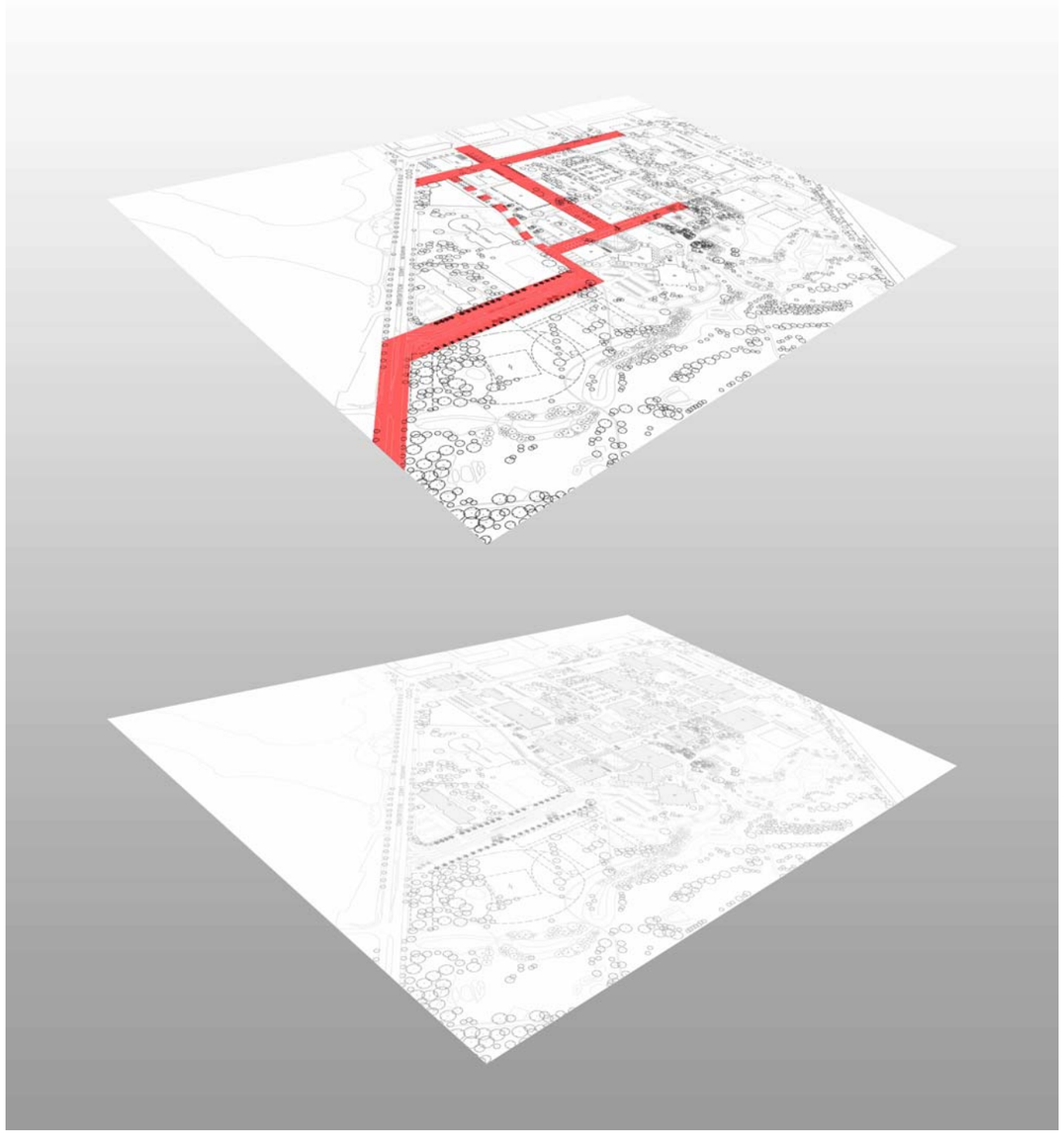
There are several factors that indicate that the campus landscape will need to adapt and develop:

- Projection of a fresh image and high amenity as a context for the development of the Campus;
- Provision for additional buildings and associated external spaces;
- Development of visual axis and pedestrian linkages to Mawson Centre and Mawson Town Centre;
- Accommodation of outdoor education and passive recreation;
- Increasing concern with ESD and in particular: water and energy conservation.

The use and enjoyment of the campus landscape revolves around a series of organised spaces or opportunities that together provide a sense of integrated landscape structure and hierarchy. Rather than being conceived as ‘left-over green areas’ these elements of the landscape together form and constitute the livable landscape of the campus, perceivable as the connecting structure of the external spaces of the campus.

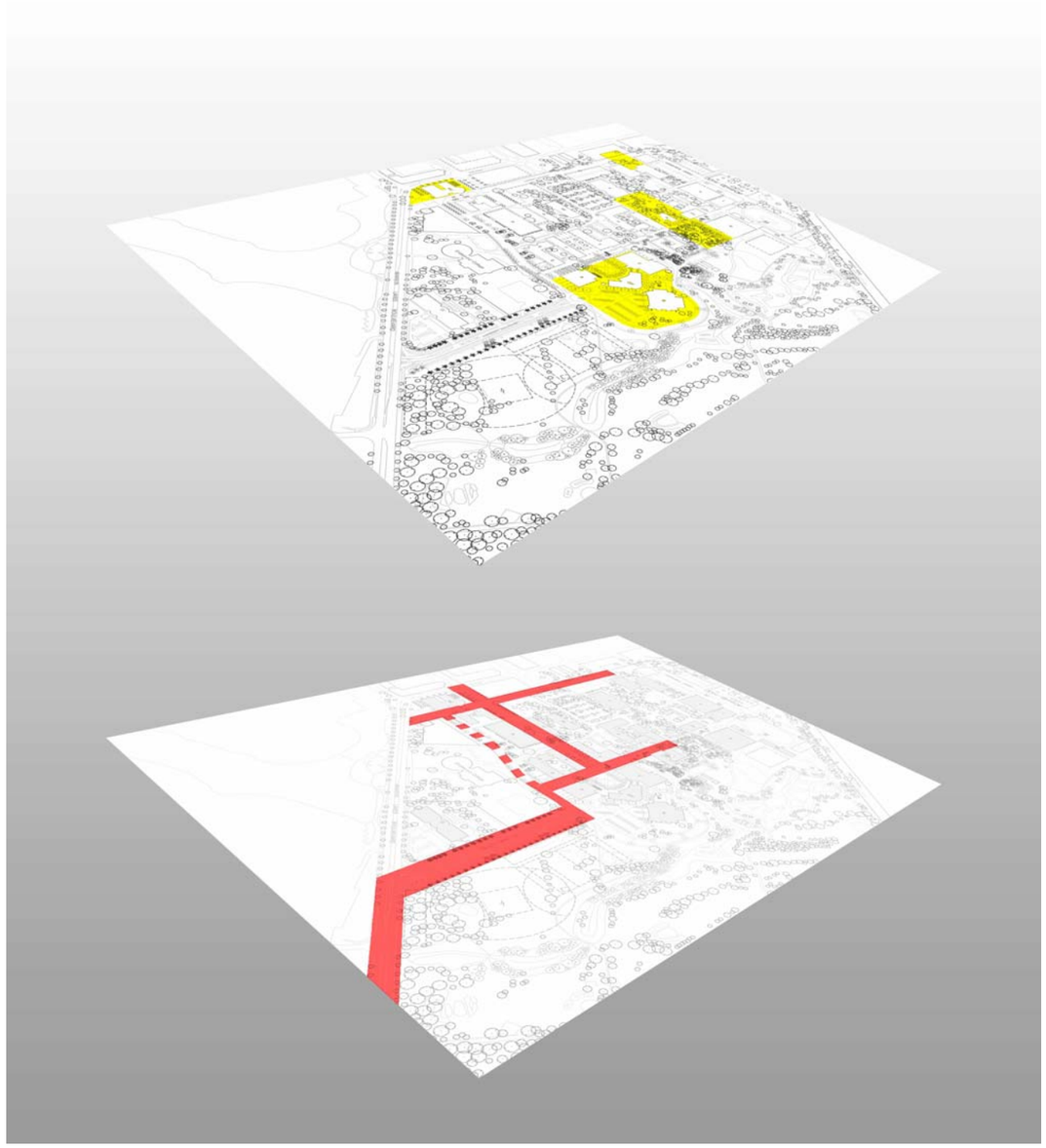


Spines



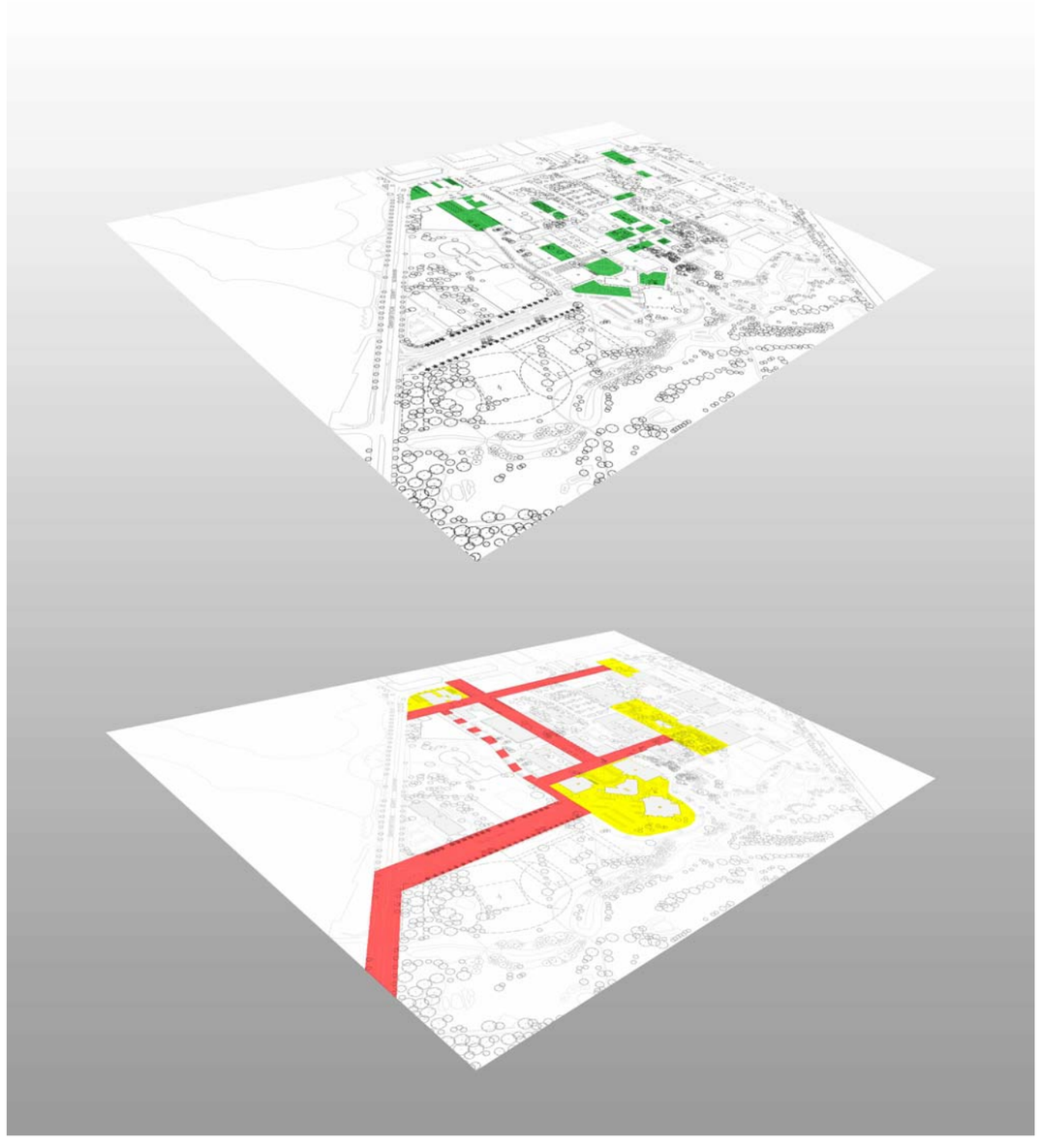
Spines: a backbone of campus circulation linkages that run right across the campus, providing legible pathways with high amenity and visual interest, imparted through soft and hard landscape. Spines include complying pedestrian lighting and AS 1428: Design for access and mobility.

Courtyards



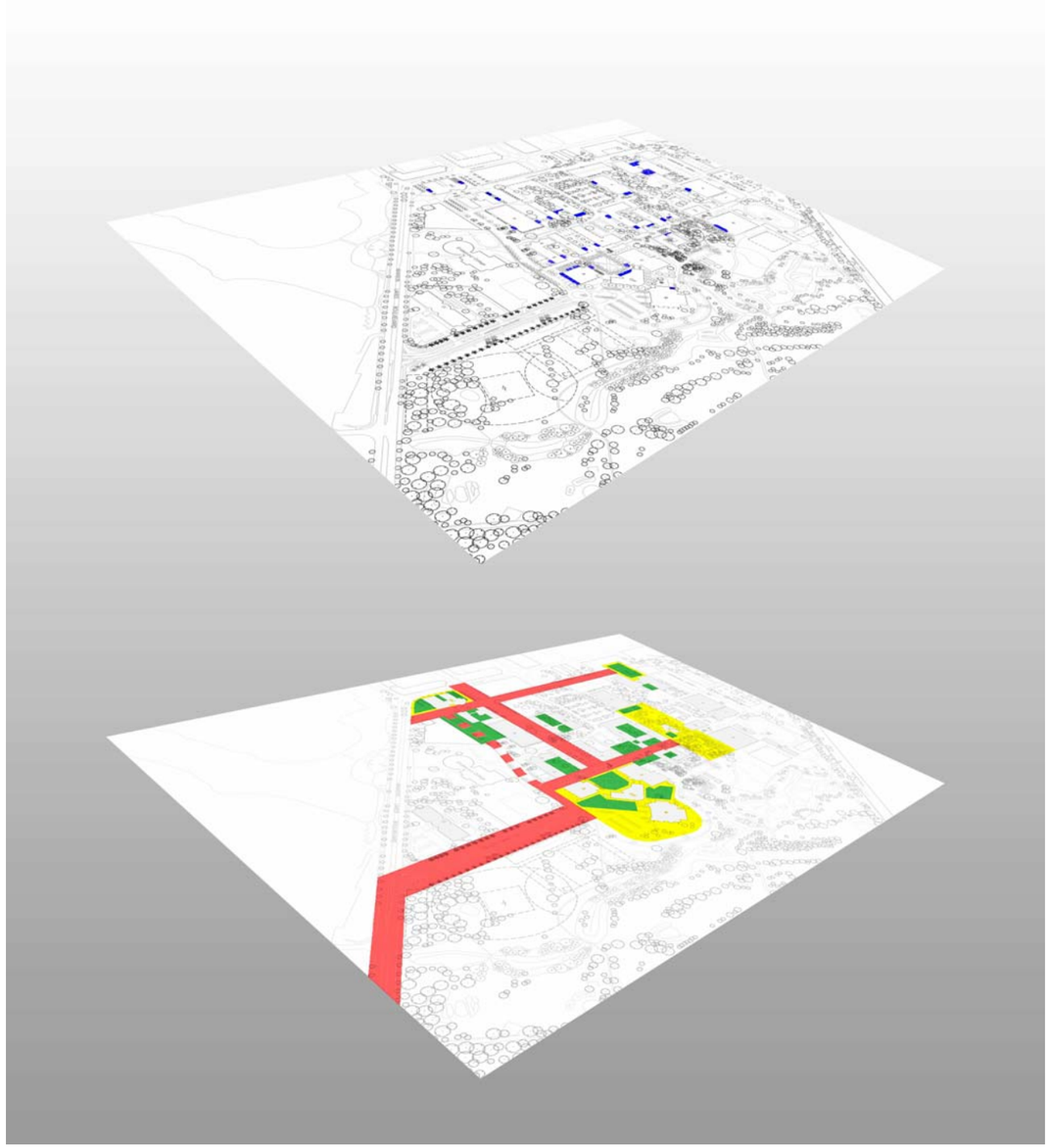
Courtyards: enclosed spaces that are edged by by buildings on two, three or four sides, frequently overlooked by adjoining internal spaces and including planting and paving. Generally they are accessible and include planted areas.

Campus Hubs



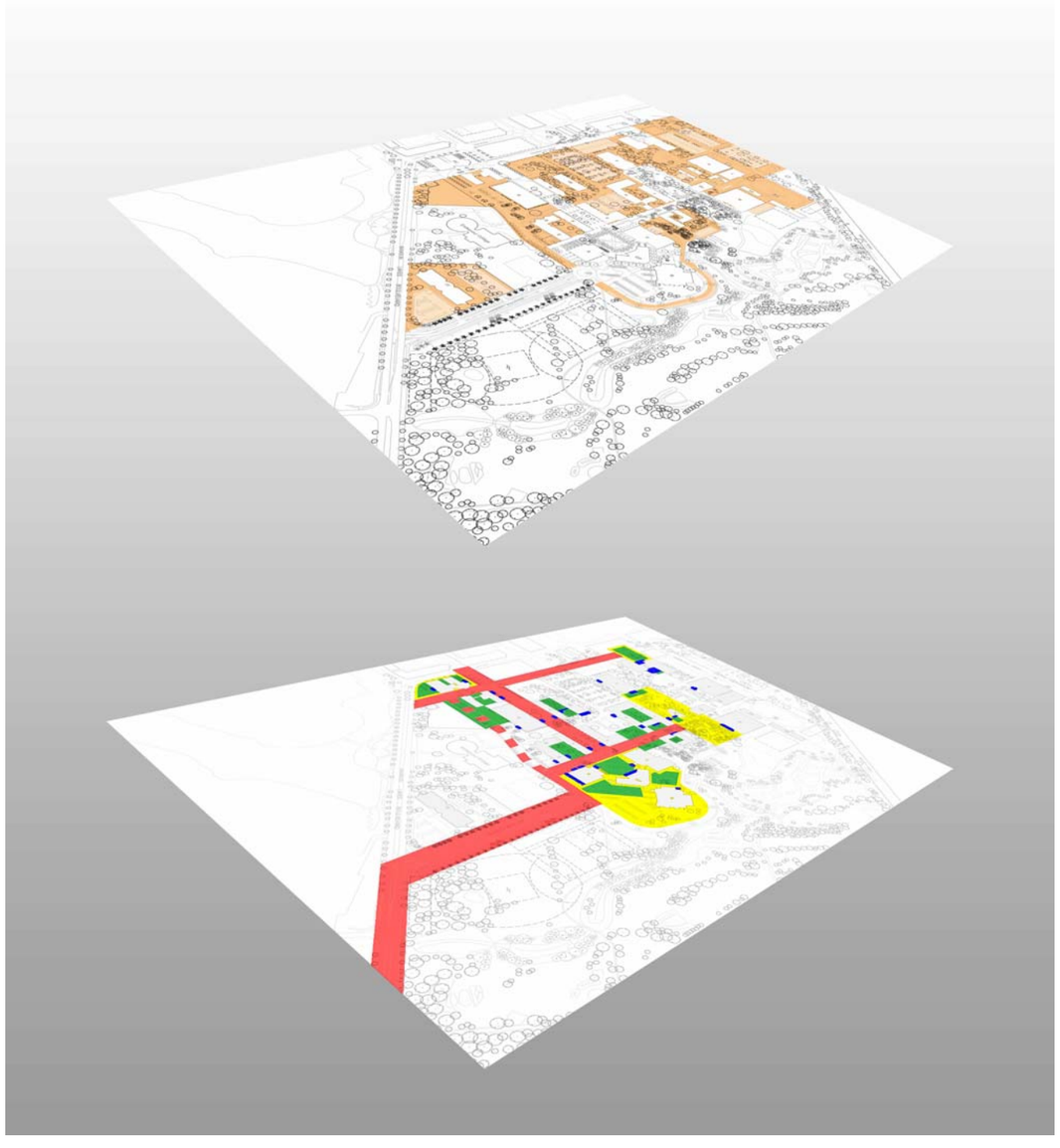
Hubs: areas where there is a confluence of spines, paths and/or building entries, ‘natural’ interaction venues, used as casual meeting and gathering places. Generally, hubs combine plaza paving and formal walkways along with formal structure planting, seats/tables and lighting. They are also an appropriate location for works of art.

Entrances



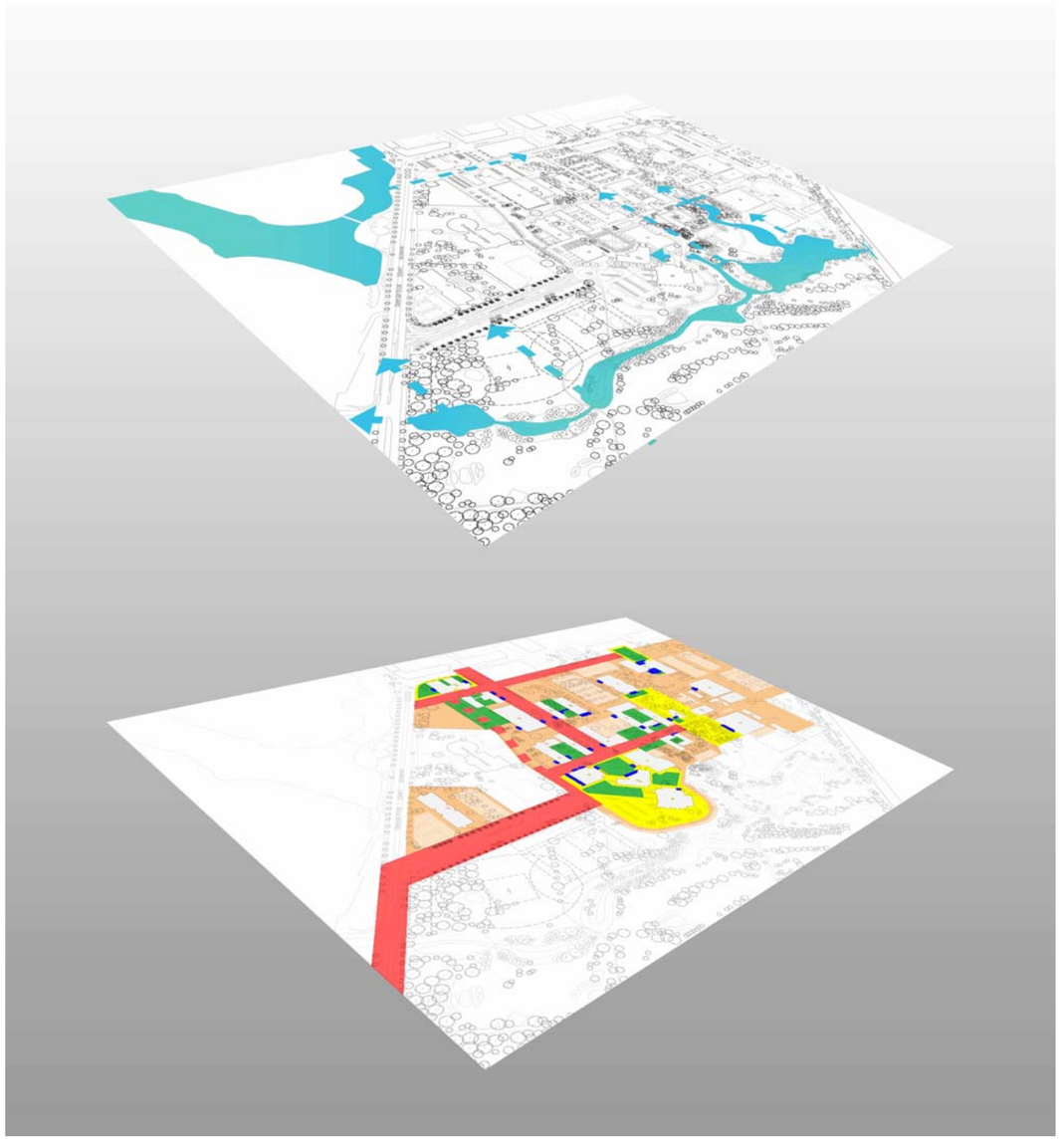
Entrances: for each building, one or more ‘address’ points as a main entry, which may include forecourt paving, a shade structure, informal seating and associated soft landscape.

Informal Spaces



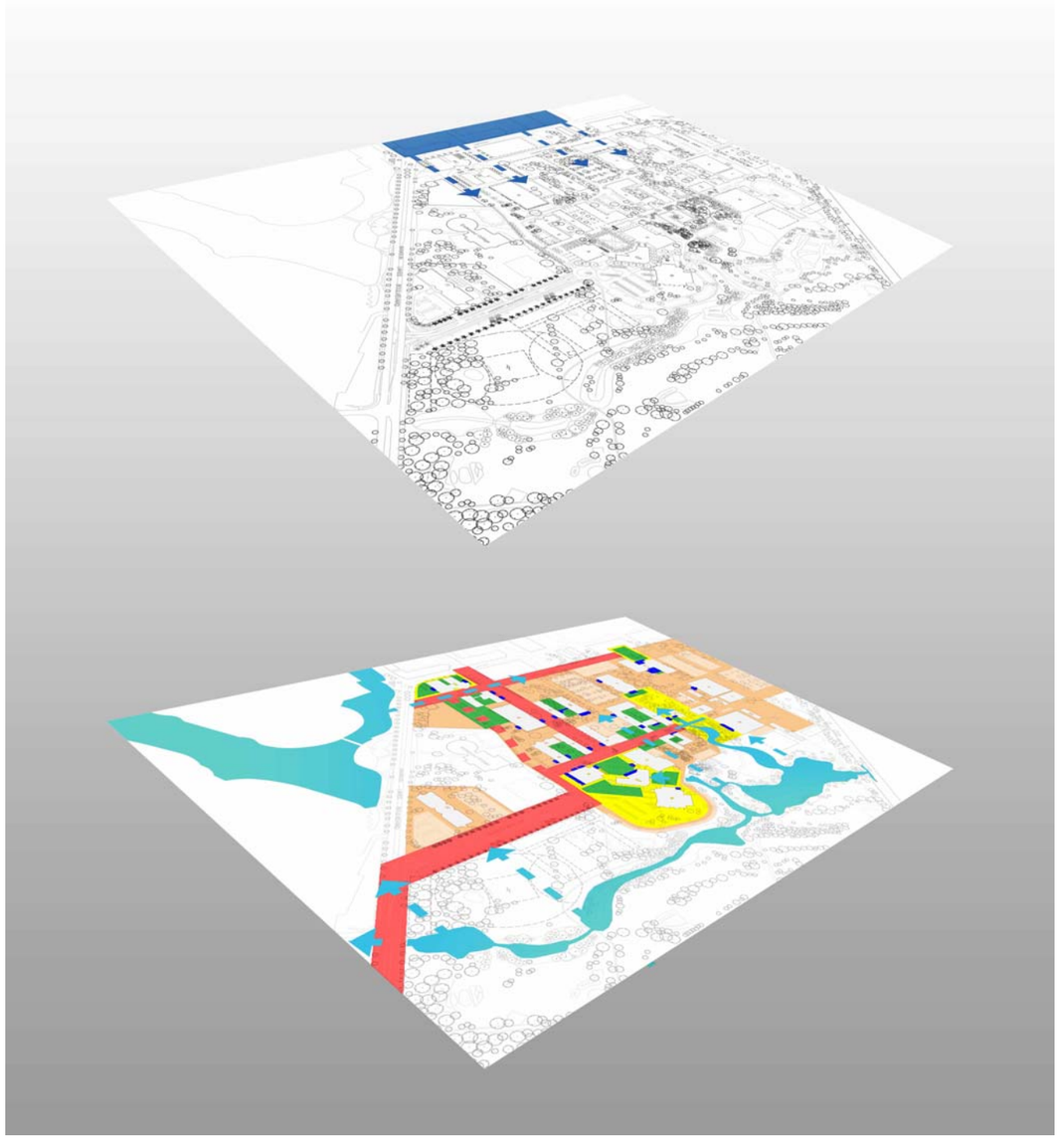
Informal spaces: extensive areas beyond the more formal areas of the campus, which provide a background landscape and which include car parks and general open spaces. These spaces are quite extensive and generally should have naturalistic native canopy tree planting.

Water



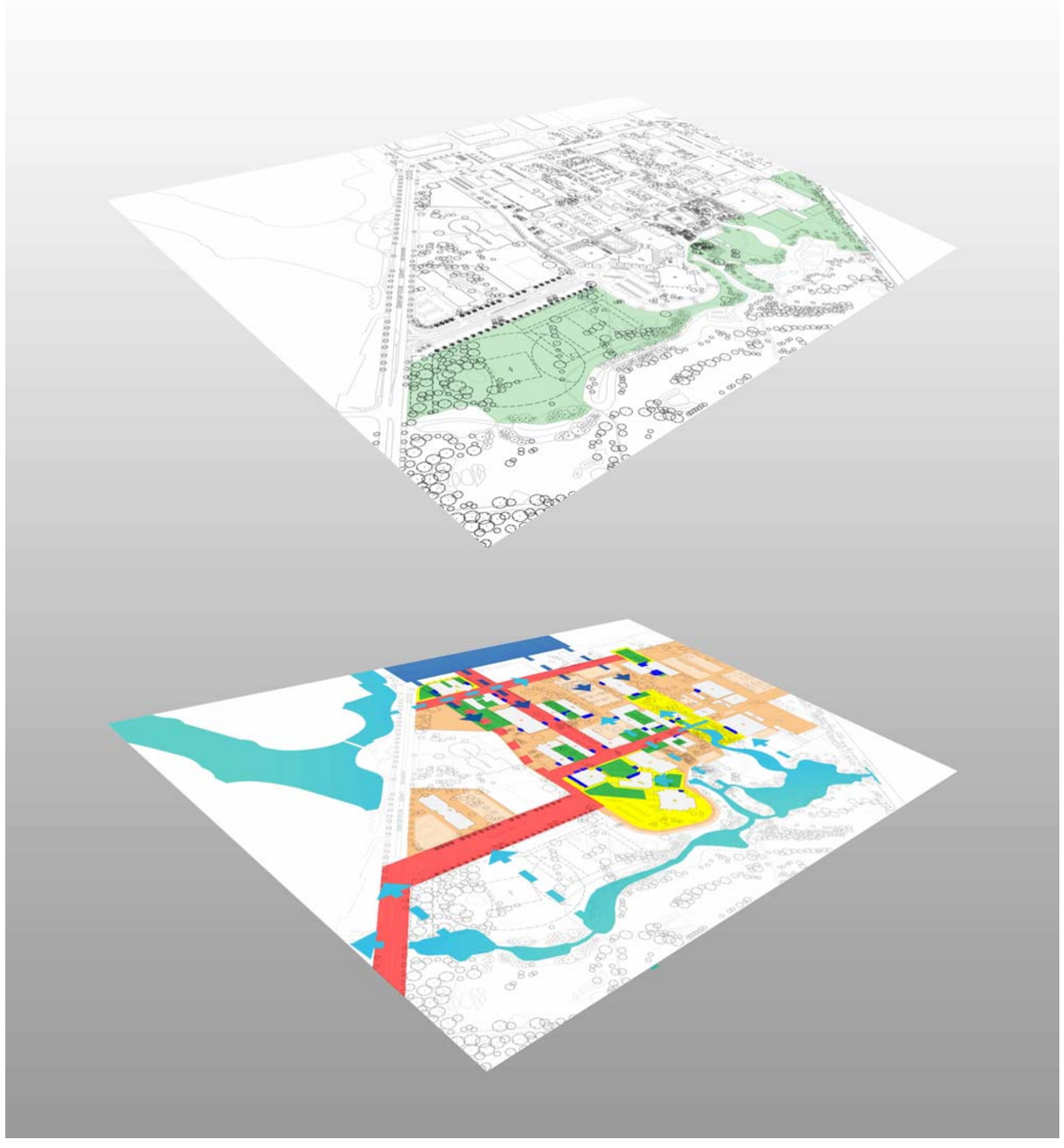
Water: the current water-scape on the eastern edge of the core campus generally provides very pleasant visual relief as well as providing habitat and water quality advantages. There are opportunities to increase water-scape areas within and beyond the more formal campus areas, in particular, by extending water areas into the new hub space between buildings OC and M, and by impounding the existing stream and providing a water area adjoining Mawson Lakes Boulevard.

Town Connection



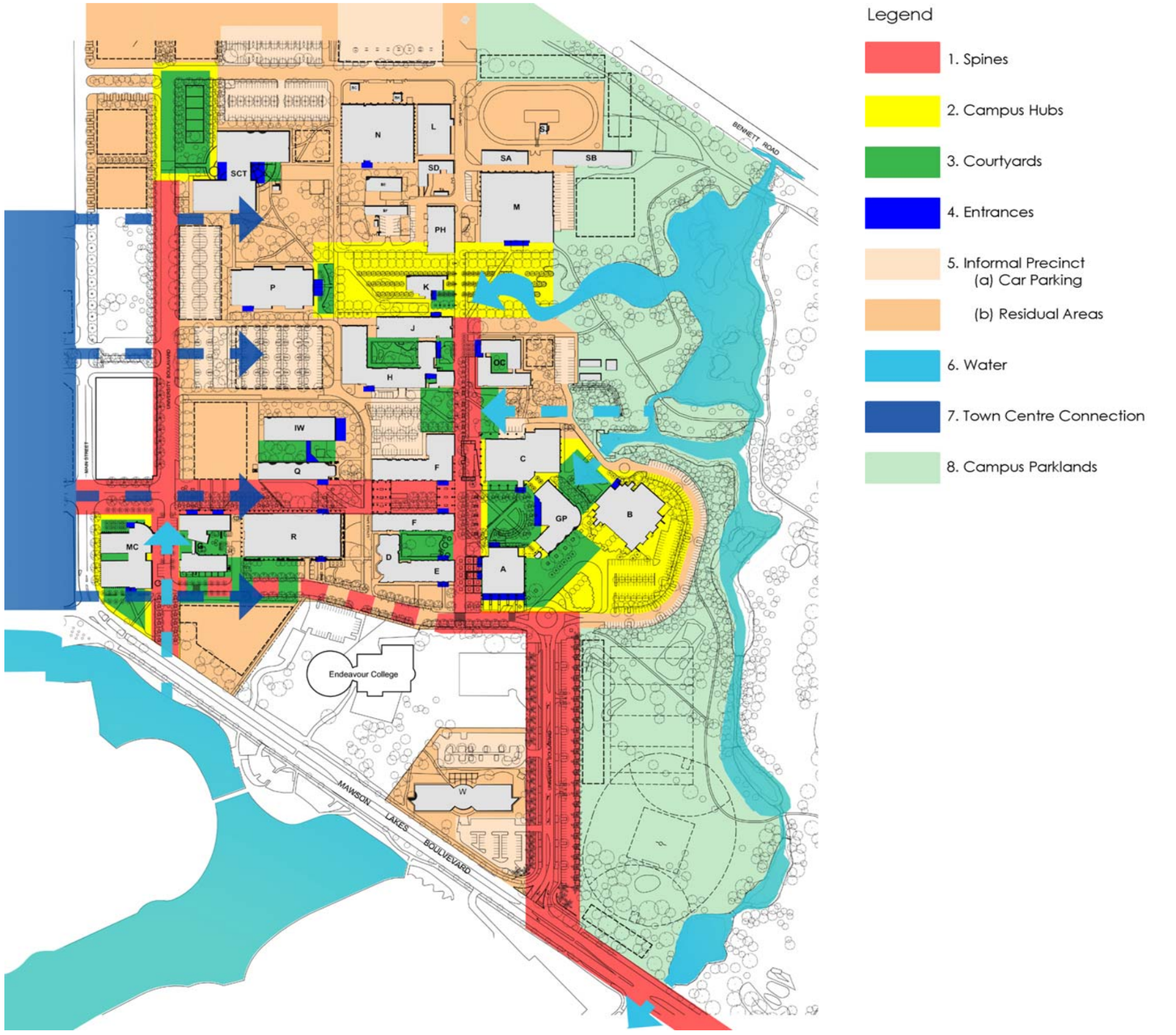
Town Connection: the landscape component on the western edge of the campus is an opportunity to integrate the campus with the town centre so that there is a ‘blurred edge’ and continuity between the two.

Parklands



Parklands: the residual parkland areas between the core campus and the wetland waterway have potential as a recreation and environmental reserve. Improving access paths and developing environmental study sites would be appropriate.

Hierarchy



Hierarchy: taken together, the elements of landscape structure and hierarchy provide a general framework for the ongoing development of the campus landscape. In the subsequent stage, these are made more specific in the form of a landscape masterplan.

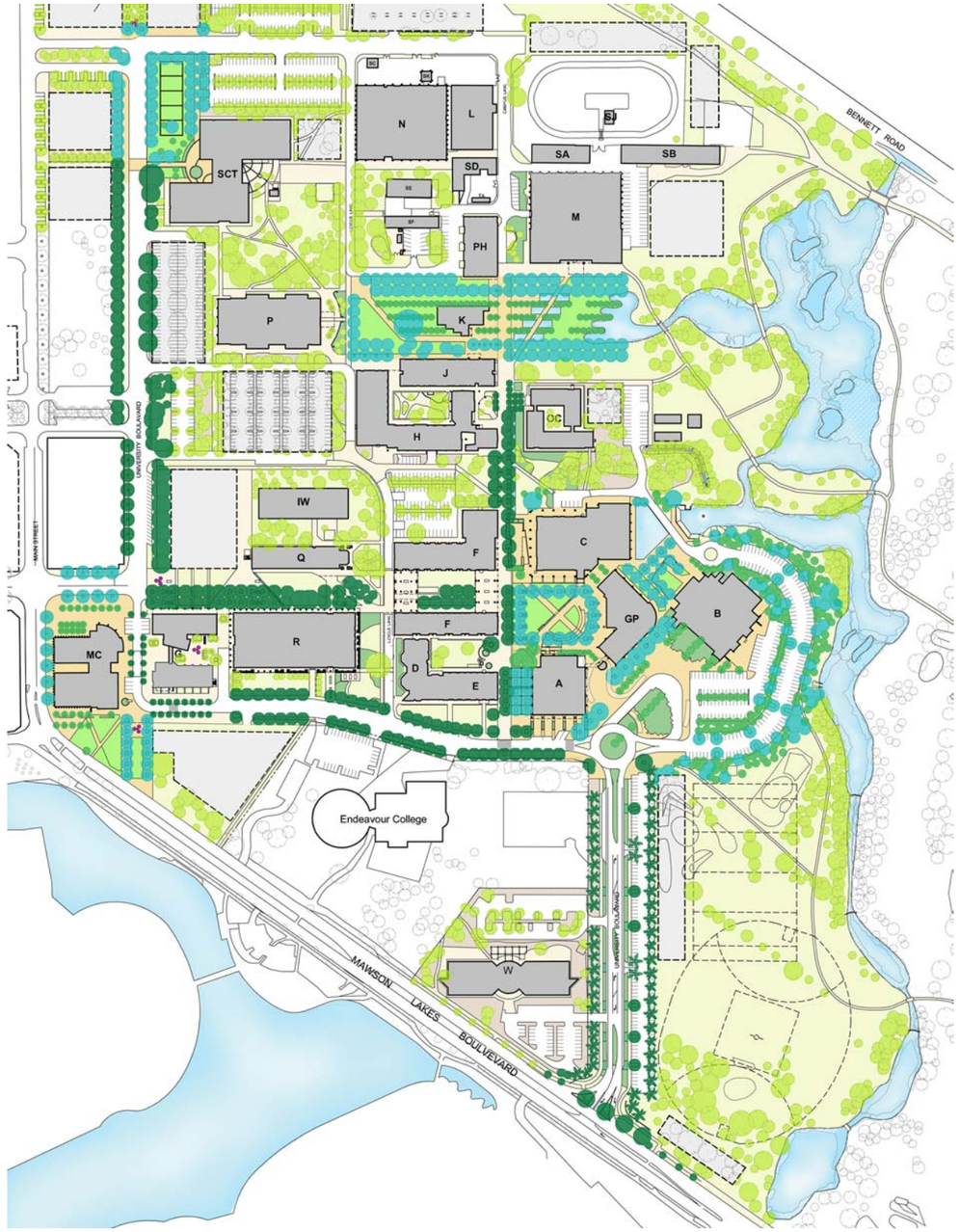
Overall Master Plan

The Mawson Lakes Campus Landscape Masterplan provides a framework for the development of the campus landscape, integrating existing and proposed built elements while ensuring there is a high level of amenity and convenience within a strong sense of structure and hierarchy. Buildings and landscape are integrated to form a series of precincts that are visually attractive, well articulated physically, are convenient for users, impart a sense of place and encourage use, enjoyment and interaction.

The masterplan is presented in two parts: firstly as an overall plan of the whole of the campus (excluding the golf course) and secondly as a series of precinct plans for priority areas. The overall plan is appended on CD with this volume to allow viewing at a larger scale.

The key features shown on the masterplan include:

- Primary circulation walkways that run north-south and east-west across the campus, emphasized by avenue planting of canopy trees, mainly exotic species.
- Secondary circulation walkways that link the primary circulation routes with destinations such as building entries, the car parks and the parklands.
- Proposed planting of canopy trees.
- Main Hub spaces located adjoining buildings CP, B, MC, M and SCT, each of which has particular planting and paving materials and other elements such as seating.
- Informal spaces which provide a background landscape and which include car parks and general open spaces.
- Additional water elements within hub areas by extending existing water areas into the new hub space between buildings OC and M, and by impounding the existing stream and providing a water view adjoining Mawson Lakes Boulevard.
- Connection to Mawson Town Centre and the blurring of the boundary along University Boulevard (west).
- An outline of potential development of the Parklands.



Precinct Plans

Introduction

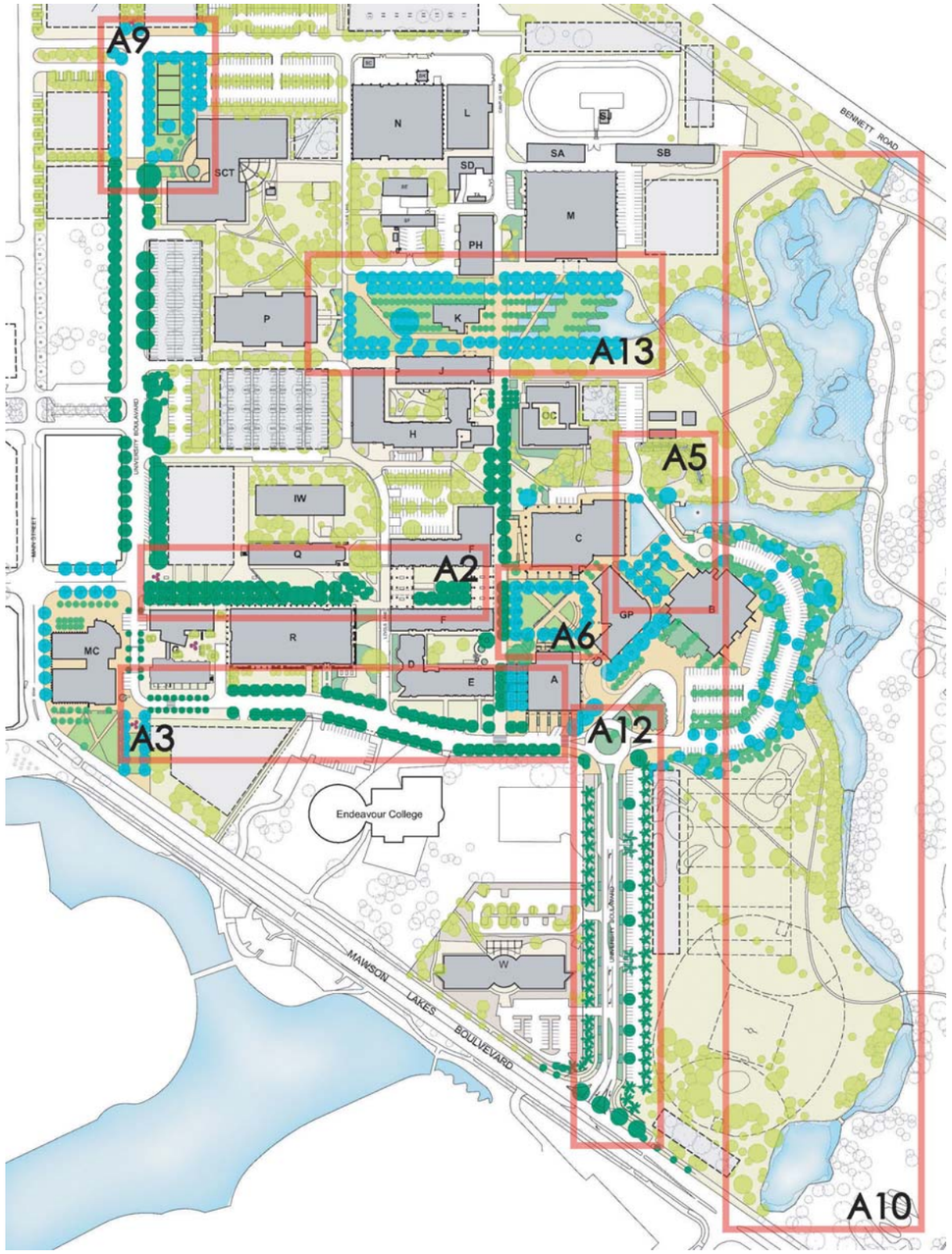
The following precinct plans provide additional landscape focus and details, supplementing the provisions of the masterplan. The precincts are areas of campus with priority in terms of ongoing landscape development, arising from the Campus Masterplan and confirmed by LMRG.

Each precinct is envisaged as developing its own landscape character through consistency of hard and soft landscape, yet integrating with and contributing to the overall integrity of the campus landscape.

The precincts are:

Precinct A2: Town Walk- Main Pedestrian Walkway
Precinct A3: Promenade along University Boulevard
Precinct A5: Library Precinct
Precinct A6: General Purpose Courtyard
Precinct A9: Northern Gateway precinct
Precinct A10: Wetlands Precinct
Precinct A12: University and Mawson Lakes Boulevards Corner Precinct
Precinct A13: Building M and Meadow

Note also that the bus interchange area adjoining Building A is subject to a separate design proposal, which has been incorporated generally into the Landscape Masterplan.



Precinct Key Plan

North

Precinct A2 - Town Walk - Main Pedestrian Walkway

Overview

Town Walk is the main pedestrian walkway link, connecting the Library (C), General Purpose(GP) and Facilities (A) buildings, and the bus interchange, to Mawson Centre building and the town centre. It connects two of the main hubs of the campus. Along the way, it provides access to buildings F, Q, R, G and a proposed additional building.

This walkway is therefore of key importance for east-west pedestrian movement. Also, it will likely play an increasing role in the 'public face' of the University campus. Landscape components need to be of a high standard and robust to heavy use.

Planting

Avenue planting of advanced deciduous trees along the southern side of the walk provides shade to the walkway and to existing ambulatory walkways along building R. Detailed shade tolerant planting along building F and the new building. Grassed elsewhere.

Paving

Provide unit pavers with honed finish and consistent colour pattern throughout walkway, but retaining undercroft tiling. Provide raised paved crosswalk at Levels Lane.

Lighting

Provide pedestrian pole lighting using recommended fixture type 2 (see Appendix 3.) that meets Australian Standards for pedestrian walkways.

Furniture

Include purpose made in-situ bench seating as indicated. Refer to Appendix 3.

Traffic Control

Provide raised paved pedestrian crosswalk at Levels Lane.

Special Aspects

Plan indicates location for stone paving cross-markers. Retain aboriginal pole artwork. Location indicated for landmark artwork.

Plan 1:1000

Precinct A3 - Public Promenade along University Boulevard

Overview

University Boulevard is the main vehicle circulation road on the campus. In precinct A3, it also serves as a pedestrian walkway, connecting Building A and the bus interchange to Mawson Centre. It also provides access to buildings E, D and R but not to the main entry of those buildings. The walkway is therefore of secondary importance for east-west pedestrian movement. However, the precinct includes the forecourt to Building A, a plaza between buildings E and A, and a potential plaza south of building G. Landscape treatments provide a 'public face' of the campus for motorists.

Planting

At the forecourt to A, co-ordinate with bus interchange planting of evergreen trees. The plaza between buildings E and A has a grid of evergreen canopy trees planted into paved area. Retain and augment existing trees adjoining building R and G. Avenue planting of advanced deciduous trees on each side of the roadway provides a strong avenue effect, and provides footpath shade.

Paving

Repave building A forecourt with patterned unit paving and remove level changes. Repave plaza between E and A with unit pavers. Existing roadside footpath retained.

Lighting

Retain existing street lighting along roadway. These may ultimately be replaced with pole lighting using recommended fixture type 1. At building A forecourt, provide up-lighting to undercroft pillars. Between buildings E and A provide pedestrian pole lighting using recommended fixture type 2 (see Appendix 3). Provide pedestrian lighting at proposed western plaza.

Furniture

No additional furniture items are proposed.

Traffic Control

Provide two raised paved pedestrian crosswalks as shown adjoining building A.

Special Aspects

The potential for a plaza that runs south from University Boulevard at the western end of the precinct provides a frontage to Mawson Lakes Boulevard and would be advantageous to the adjacent development site as shown.

Precinct A5 - Library Precinct

Overview

Between buildings C (library) and B (Gym), precinct A5 is a general circulation space, linking the GP courtyard to building B. It provides an outlook from the upper levels of the library. It also includes the western end of the wetlands and the water swale running from the new Eco Centre carpark.

Planting

Plant advanced deciduous trees on a grid layout within paved areas as shown. Infill planting of trees, shrubs and riverine plants along the water swale. Infill planting around building B.

Paving

Retain unit paving between building C and GP. Repave areas between building C and B with matching brick paving.

Lighting

Provide pedestrian pole lighting using recommended fixture type 2 to paved areas. Provide underwater lighting (between reed beds) in the water feature.

Furniture

Provide proprietary bench seats in front of building B.

Traffic Control

No additional provisions proposed.

Special Aspects

Provide a new deck area to the edge of wetland as shown. On the east side of the library, provide a water reflecting pool feature with strips of reed beds as shown.

Plan 1:1000

Precinct A6 - GP Courtyard

Overview

The General Purpose Courtyard is the main hub of the campus and the proposed landscape is designed to emphasise its central role and formal purpose. The existing amphitheatre and café terrace are retained. The walkways are redesigned to provide for the patterns of pedestrian movement. Planting diversity and layout is organised to reinforce the character of the space.

Planting

The formal 'structural' planting surrounding the courtyard are large deciduous trees. The recommended species is Platanus orientalis 'digitata', Cut-leaf Oriental Plane tree. The mixture of existing species adjoining building F is removed. Alnus species on the north east corner of building A extend around towards the roundtower.

Paving

Retain existing unit paving generally and use the same paving material to replace the mixed range of existing paving materials. Retain tiling to University Walk and existing undercroft paving.

Lighting

Provide pedestrian pole lighting using recommended fixture type 2 to paved areas. Provide underwater lighting in the water rill. Provide up lighting to undercroft of buildings C and F.

Furniture

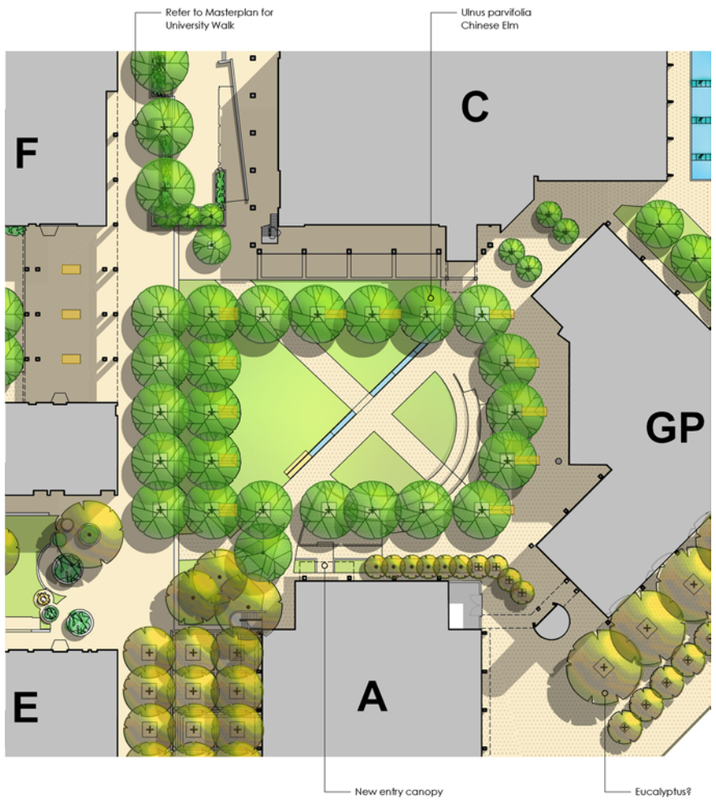
Include purpose made in-situ bench seating as indicated. Include tables with bench seats at western end. Refer to Appendix 3.

Traffic Control

Not applicable. Emergency access is possible via University Walk.

Special Aspects

The landscape design includes a long water rill running diagonally and pointing to the library entry.



Plan 1:1000

Precinct A9 - Northern Gateway Precinct

Overview

Adjoining the existing SCT building and extending to meet proposed additional buildings to the north and west, this precinct shows a formal layout with deciduous trees surrounding a terraced sunken lawn area. Additionally, there are street trees shown along the northern sector of University Boulevard, which is realigned at the corner, providing a more urbane character.

Planting

Extensive use of advanced deciduous trees. Infill planting of evergreen trees and detailed shade tolerant planting between buildings.

Paving

All paving in this precinct proposed to be exposed aggregate concrete paving. Existing concrete paving shot blasted to expose aggregate.

Lighting

For street lighting, use pole lighting using recommended fixture type 1. Provide pedestrian pole lighting using recommended fixture type 2 to paved areas.

Furniture

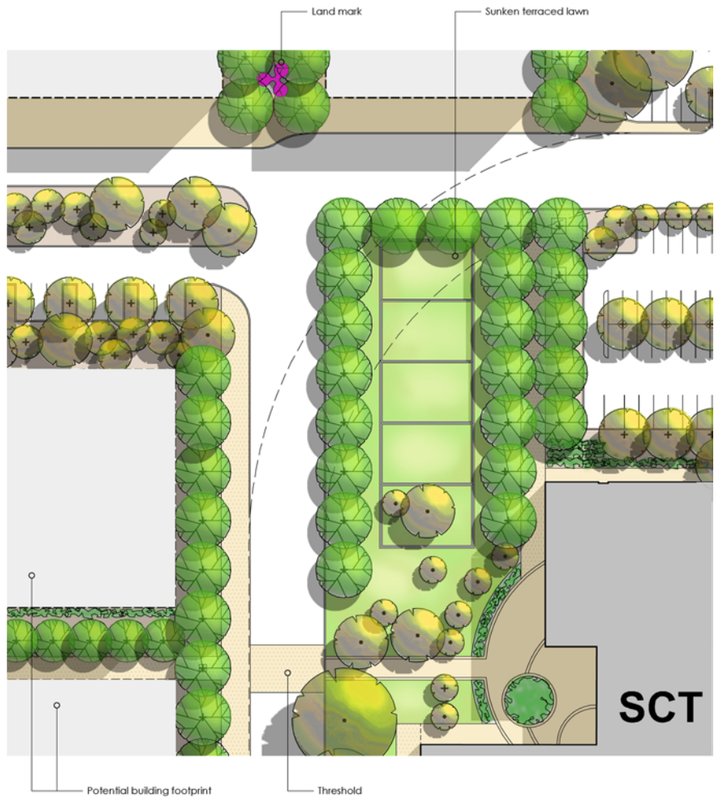
Provide proprietary bench seats in front of building B.

Traffic Control

Road realignment to form T junction.

Special Aspects

Landmark art object at termination vista to University Boulevard.



Plan 1:1000

Precinct A10 - Wetlands Precinct

Overview

The wetland precinct provides stormwater wetlands, collecting road runoff from Mawson Lakes Boulevard and eventually discharging into Bennett Road Drain. Along the way, the stormwater passes through a series of detention ponds that are heavily planted with wetland reeds and sedges. The wetland is generally in good condition and provides visual relief and a sense of environmental integrity. At the southern end of the wetland, there is an opportunity to provide a view of open water and wetlands, from Mawson Lakes Boulevard.

There is also an opportunity to adjust the form of the wetland opposite the eastern car park, so that an island is formed with a walkway passing across the island. The island would provide added habitat protection for avifauna.

Planting

The existing extent of wetland vegetation is very adequate.
Additional wetland planting (approximately 250 sq m) around the proposed southern pond.
Infill planting to the eastern carpark and around the wetlands.

Paving

No additional walkways are proposed.

Special Aspects

By installing a weir bridge, similar to those at other locations along the wetlands, which impounds the water flow and raises the level of impounded water.

Legend

- Existing Deciduous Tree
- New Deciduous Tree
- Existing Evergreen Tree
- New Evergreen Tree
- Shrubs in Bus Interchange by Russell and Yelland
- Grassed Area
- Existing Paved Area
- New Paved Area
- Mulched Area
- Water
- Islands with Planted with Reeds
- Existing Reeds
- New Reeds
- Foot Bridge

Plan 1:2000

North

Precinct A12 - University & Mawson Lakes Boulevards Corner Precinct

Overview

University Boulevard (south) is the main vehicle entry avenues for the campus. It extends around the south of Precinct A3 to provide the main circulation road on the campus. In precinct A12 it also provides access to Endeavour College and serves as a pedestrian walkway, connecting SPRI to the bus interchange and the campus area. Landscape treatment provides a first impression 'public face' of the campus for motorists. The basic framework of avenue trees (Canary Island Palms) is in place. Decorative median and kerbside planting is proposed.

Planting

Additional Canary Island Palms to complete the avenue are included. Median and kerbside planting of low evergreen shrubs is proposed.

Within the carpark, evergreen and palm species are included to visually soften the existing car park.

Paving

No additional paving is proposed.

Lighting

Retain existing street lighting along roadway. They may ultimately be replaced with pole lighting using recommended fixture type 1.

Furniture

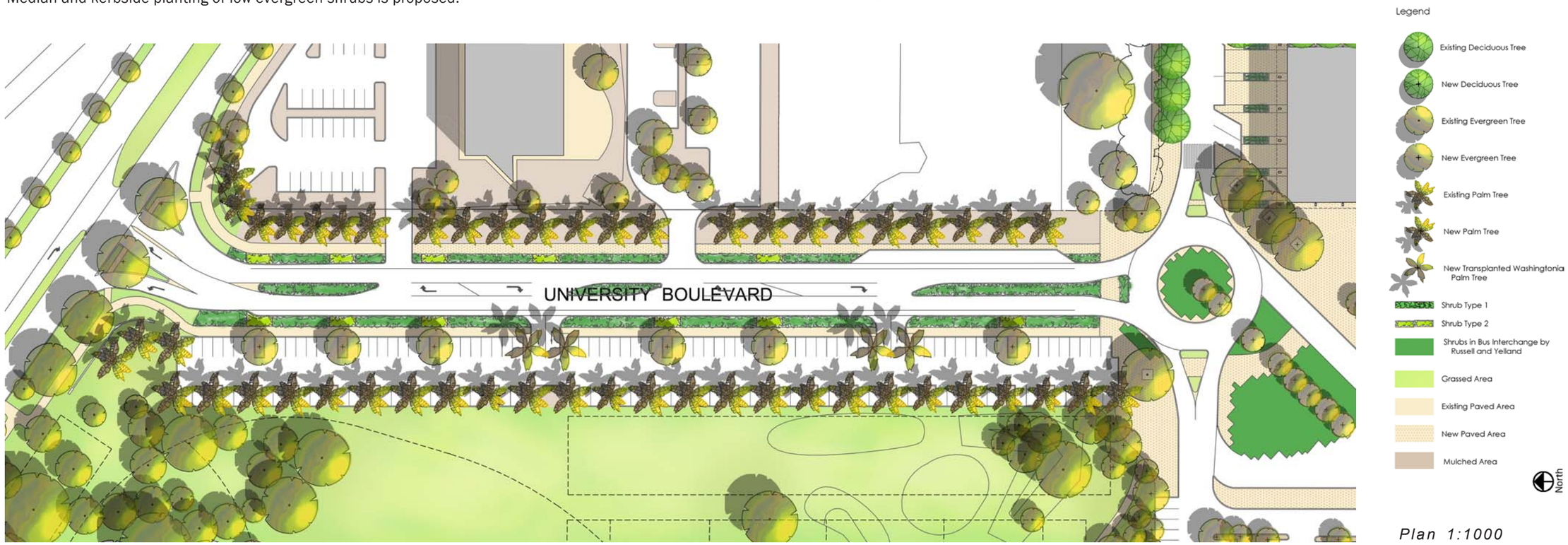
No proposed furniture.

Traffic Control

The proposed raised medians replace existing painted medians. Provision has been made for a bus lay-bay parking.

Special Aspects

Extend existing stone entry wall around to face Mawson Lakes Boulevard.



Plan 1:1000

Precinct A13 - Building M Green / Meadow

Overview

This precinct is a hub space at the north end of University Walk and provides a connecting space to buildings M, OC, J, K, PH and west to building P. The key proposal is to extend the water / wetland area into the space, to provide a direct foreground water view for the campus. There is a further sequence of reflecting water pools adjoining University Walk with a bridging pathway leading across to the main entry to building M.

Planting

Extensive planting of rows of evergreen and deciduous trees with infill of trees and wetland species around the proposed wetland lake.

Paving

Retain existing paving to University Walk. Provide unit pavers with honed finish and consistent colour pattern throughout precinct. Provide raised paved crosswalk/bridging path to building M.

Lighting

Provide pedestrian pole lighting using recommended fixture (see Appendix) that meets Australian Standards for pedestrian walkways.

Furniture

Include purpose made in-situ bench seating as indicated. Refer to Appendix 3.

Traffic Control

Adjoining building P, Levels Lane is reconfigured as a shared road path.

Special Aspects

Nil.

Existing Vegetation Schedule

The following table refers to existing vegetation on campus that has, to varying degrees, proved adaptable to site conditions. Recommended species are shown in **Bold underlined.**

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Allocasuarina verticillata / glauca Drooping Sheoak / Swamp Oak	B,G	Multi-trunked / 5-20 x 5-9m		Adapts to varying soils.	Performing well. Not suitable near buildings. Not suitable near underground services.	Low maintenance. May produce suckers.
Alnus jorullensis Evergreen Alder	P, G, B	Good / 2-4 x 1-3m		Planter boxes with good drainage. Performing well with irrigation.	Provides good shade.	Performing well with irrigation to keep salinity low.
Betula pendula Silver Birch	G	Ok / 5 x 4m		Out of Context.	Epicormic growth. Not for wide use.	Regular prune and tidy required.

Existing Vegetation Schedule

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Brachychiton populneus Kurrajong	G	Poor / 5 x 2m		Good specimens but variable.	Variable performance.	
Callitris preissii Southern Cypress Pine	G	Good		Good form and handy to termites and salinity.	Nice specimen, but in competition with casuarina	Good low maintenance tree for open areas.
Casuarina glauca Swamp Oak	G	Good / 7 x 4m		Suitable adjoining wetlands areas.	Effective planting.	Requires underplanting.
Cinnamomum camphora Camphor Tree	B, G, P	Good / 3 x 1.5m		In group by bench.	Generally performing well	Some planted too close to other plants and need removal.

Existing Vegetation Schedule

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Erythrina crista-galli Cockspur Coral Tree	P	Good / 15 x 10m		Not suitable for the planter box.	Multi-trunked, some bad pruning cuts.	Requires dead-wooding and shaping.
Eucalyptus citriodora Lemon-scented Gum	B	Good / 4-15 x 2-20m		Should not be located near path and road. Imported soil.	Not suitable near buildings.	Limb dropping.
Eucalyptus forrestiana Fuchsia Gum	G	Poor / 4 x 4m		Not performing as expected.	Very thin canopy.	Low maintenance.

Existing Vegetation Schedule

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Eucalyptus maculata Spotted Gum	B, G	Varying / 2-10 x 1-9m		Most planted in context. Some planted too close to each other or to a building. Soil ok.	Generally good specimens. Trees close to path roots could lift	Remove dieback, thin canopies. Some removal necessary due to over-crowding.
Eucalyptus sargentii Salt River Mallet	B	4 x4m		Good small tree.	All performing well.	Minor limb trimming required.
Eucalyptus sideroxylon rosea Red Ironbark	B	Varying / 2-10 x 1-4m		Soil ok. Context good and appropriate in most cases. Some plants are planted too close. Full sun.	Some healthy, others; dead, felled, epicormic, with lost leader, signs of salt damage or dieback on mature leaves.	Some need removal where out of context, or thinning of canopy or formative prune and removal of lower limbs.
Eucalyptus spathulata Swamp Mallee	B	Good / 12 x 8m		Very suitable for site.	Good specimen. Not suitable near buildings.	

Existing Vegetation Schedule

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Ficus benjamina Weeping Fig	B	4 x 3m		Soil good. Very large tree. Buttressing could cause issues.	Healthy, performing well. Some fruit drop. Not suitable near buildings.	Generally for maintenance.
Fraxinus excelsior Golden Ash	P, B	Ok / 12 x 8m		Very adoptable - impressive deciduous tree.	Performing well.	Remove dead wood.
Gleditsia triacanthos Honeylocust	B	Varying / 3 x 1-3m		Under irrigation, clay based soil. Soil, ok. generally not in context with other plantings.	Some epicormic growth and die back, not in good shape. In competition with other tree.	Remove dieback.
Jacaranda mimosifolia	P	Varying / 3 x 1m		Good tree if under irrigation.	Has dieback.	Requires watershoot removal and irrigation until established.

Existing Vegetation Schedule

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Lagunaria patersonii Norfolk Island Hibiscus	B, P	Good / 6 x 4m			Performing well. Has a clean trunk of growth.	Produces irritating seed.
Metrosideros excelsus variegates New Zealand Christmas Tree	P	Good / 4 x 4m		Suited to planter box size.	Good specimen. Can be used near to paved areas.	
Olea europaea Olive	B, G	Ok / 3-4 x 2-3m		Performing well under irrigation.	Seeding down.	Remove.
Phoenix canariensis Canary Island Date Palm	B	Good / 3-7 x 3-5m		Chip bed with no irrigation. Some are planted too close. Not in context with Eucalyptus sp.	Generally good specimens.	Some plants may need transplanting, and dead frond and / or basal shoots removed

Existing Vegetation Schedule

TREES

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Platanus x. acerifolia Plane Tree	B, G, P	Varying / 5-6 x 3-5m		Suitable where there is sufficient space for roots.	Planted too close together. Lateral roots of commemorative tree on mound may hit adjacent building.	Overcrowded and dead specimens will need removal. Will lift pavers and bitumen.
Schinus mollis Pepper Tree	B	1-9 x 1-4m		Very robust tree with attractive form.	Not suitable near buildings.	Some large branch removal.
Syzygium paniculatum Lilly Pilly	P	Good / 5-10 x 5m		Good specimen shade tree.	Signs of insect damage to new growth. Aphid damage and scale present.	
Zelkova serrata Japanese Zelkova	B	Good / 2-4 x 2-3m		Performing well.	Lonely specimen performing well.	

Existing Vegetation Schedule

SHRUBS

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Agonis flexuosa nana Dwarf Willow Myrtle	B	Bush / 0.6x 0.8m		Robust shrub.		Need to be densly planted.
Agapanthus praecox African Lily	B	Strappy / 0,8 x 0.6m		Robust and provides green / colour.		
Alyogyne huegelii Blue Hibiscus	B	Gangly / 1.2 x 1.5m		Performs well.		Requires pruning regularly.
Buddleja davidii Butterfly Bush	B	Good / 3 x 3m			Good flowering.	Requires pruning regularly.
Callistemon 'harkness' Red flowering Gawler Hybrid	P, B	Good / 2-4 x 1.5-5m		Performs well. Flowers well.	Good specimen, flowering well.	Low limbs require removal.

Existing Vegetation Schedule

SHRUBS

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Correa reflexa Native Fuchsia	B	Bush / 0.6 x 1.2m		Red flowering. Forms low bushy shrub.		
Eremophila maculata Spotted Emu Bush	B	Bush / 1.5 x 2m		Good bushy flowering shrub.		
Hakea laurina Pincushion Hakea	B	2 x 2m		Interesting flowers. Good screen shrub.		Low maintenance.
Kunzea pomifera Muntries	B	Bush / 1.5 x 1.5m		May require irrigation.		

Existing Vegetation Schedule

SHRUBS

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Melaleuca armillaris Bracelet Honey Myrtle	B	Rounded / 3 x 3m		Group Plantings. Good screen bush.		Low maintenance.
Melaleuca diosmifolia Green Honey Myrtle	B	Rounded / 2 x 2m		Open form.	Performing well.	
Melaleuca incana Grey Honey Mytle	B	Bushy / 1.5 x 1.5m		Good infill shrub.	Performing well.	
Pittosporum 'garnettii'	B	Ok / 3 x 3m		Variaged leaves - flushed pink purple flowers.		

Existing Vegetation Schedule

SHRUBS

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Pittosporum phylliraeoides Weeping Pittosporum	B	Ok / 3 x 2m		Weeping form, grey colour. Very robust.		
Plumbago auriculata Blue Plumbago	B	Straggly / 1.5m x 2m		Handy bushy shrub.	Performing well.	Requires regular pruning.
Westringia fruiticosa Coast Rosemary	B	Bushy / 2 x 2m		Robust shrub.		
Pennisetum setaceum Fountain Grass	B	Grass				May be become weed.

Existing Vegetation Schedule

TUSSOCKS / GRASSES / GROUND COVERS

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Dietes bicolor Evergreen Iris	B	Strappy / 0.9 x 0.9m		Arching strop leaves flowers.		Low maintenance.
Dietes grandiflora Wild Iris	B	Strappy / 0.6 x 0.6m		Broader strop leaves.		Low maintenance.
Erigeron karvinskianus Mexican Daisy	B	Ground cover / 0.3 x 0.6m		Infill ground cover.		
Gazania rigens Treasure Flower	B	Ground cover / 0.2 x 0.3m		Various colours; edge / mass planting.		

Existing Vegetation Schedule

TUSSOCKS / GRASSES / GROUND COVERS

Species Name Common Name Cultivar	**G**rass area, **B**ed area, **P**aved area	**Form** / height & spread	**Photo**	**Comment**	**Other comments**	**Maintenance** / disease / performance / condition of tree
Hibbertia scandens Golden Guinea Flower	P - planter box	Prostrate		Performing well. Planter boxes are ugly, a difficult height and shape.		Remove planter boxes.
Hedra helix English Ivy	P - planter box	Prostrate / Climber				Can be invasive.
Myoporum parvifolium Creeping Boobialla	B	Prostrate x 2m		Green groundcover.		
Sollya heterophylla Blueberry Creeper	B			Good low climber.		Requires regular pruning.

Preferred Plants Species List

The following tables include plants species that are generally recommended for use on the Mawson Lakes Campus. Detailed planting plans, including specification of growing media and irrigation, are required for all proposed planting, so that the selection of species and the positioning of the selected species in the landscape will achieve the desired results. The ultimate size and horticultural performance of each plant requires careful selection. Additionally, careful selection of nursery stock is essential to planting quality assurance.

Theme 1 Formal complementary to Mawson Central

Exotic Trees known as adaptable to heavy clay soils, soil salinity in wet and dry soils

Koelreuteria paniculata	Golden Rain Tree	Medium size deciduous tree tolerant of variable soils and salinity. Benefits from irrigation. Highly recommended.
Phoenix canariensis	Canary Island Palm	Medium-large evergreen specimen tree adaptable to soils and salinity. Fonds spreading and retained, benefits from fond removal.
Platanus orientalis	Plane Tree	Large deciduous tree, highly reliable for form, performance and formal appearance. Provides excellent shade. Suitable for plaza areas but leaf and fruit drop requires clean-up in Autumn.
Pyrus ussuriensis	Manchurian Pear	Small-medium deciduous tree, used extensively at Mawson Lakes.
Ulmus parvifolia	Chinese Elm	Medium-large deciduous tree, used extensively at Mawson Lakes.

Theme 2 Formal General

Exotic and native trees known as adaptable to heavy clay soils, soil salinity in wet and dry soils

Celtis laevigata	Sugar Hackberry	Medium deciduous tree, used extensively at Mawson Lakes. Good form and performance.
Ceratonia siliqua	Carob	Small evergreen tree, decorative form, glossy green leaves, adapted to dry summers. Very good specimens north of building J
Corymbia ficifolia	Red flowering eucalypt	Small-medium evergreen tree with outstanding flowers and compact dark green crown. Form is variable- requires branch trimming for upright form.
Ficus benjamina	Weeping Fig	Used along Mawson Lakes Boulevard but aggressive roots may be problematic.
Gleditsia triacanthos var intermis	Honey Locust	Thornless variety. Open crowned medium tree, suitable for lawn areas. Suckers.
Koelreuteria paniculata	Goldenraintree	See above.
Phoenix canariensis	Canary Date Palm	See above.
Platanus orientalis	Planetree	See above.
Plumeria rubra	Frangipani	Small specimen tree, deciduous in Adelaide, decorative perfumed flowers.
Pyrus calleryana ‘Chanticleer’	Ornamental Pear	Small-medium deciduous tree, narrow form, used extensively at Mawson Lakes.
Pyrus ussuriensis	Manchurian Pear	See above
Robinia pseudocacia ‘Intermis’	Black Locust	Medium spreading open crowned tree, thornless variety. Requires careful pruning to retain form.
Schinus molle	Pepper Tree	Medium tree, spreading, weeping crown. Root are invasive. May self-seed.
Ulmus parvifolia	Chinese Elm	See above.
Washingtonia robusta	Washington Palm	Tall slim trunk, compact fonds, requires regular fond removal. Shallow rooted and adaptable.
Zelkova serrata	Japanese Zelkova.	Medium-Large tree, spreading open crown. Would benefit from irrigation.

Theme 3 Key Roadways

Celtis occidentalis	Hackberry	Small-medium deciduous tree, good shade tree. Good form and performance
Eucalyptus salmonophloia	Salmon Gum	Tall erect trunk, coloured orange. Evergreen tree with fresh glossy green umbrageous crown.
Fraxinus ‘x ‘raywoodii	Claret Ash	Medium deciduous tree. Rounded compact crown. Grafted rootstock. Claret leaf colour in late summer-autumn. Would benefit from irrigation
Platanus orientalis	Planetree	See above
Ulmus parvifolia	Chinese Elm	See above

Preferred Plants Species List

Theme 4: Native Plants

Growth characteristics for each plant is included as per the legend:

SA indicates species indigenous in South Australia.
Height in metres: likely height in metres subject to conditions. Width in metres
Soil Texture: Sa=Sand, Lo=Loam, Cl=Clay, Li=Limestone
Rainfall in millimetres where species occurs
Soil pH Indicates plant tolerance of soil acidity
A=Acid soils with pH<7
N=Neutral soils with pH=7
C=Calcareous soils with pH>7
AN/C= soils with pH<8
Frost Indicates a degree of tolerance to frost.
R=Resistant to most frosts
S=Sensitive to frost
M=Moderately sensitive to frost
FlowerColour
B=Blue, Bl=Black, Br=Brown, Bu=Burgudy, Cr=Cream, G=Green, I=Insignificant, O=Orange, Pk=Pink, Pu=Purple, R=Red, Si=Silver, Sw=Straw, W=White, Y=Yellow or Gold
Flowering time
A=Autumn, W=Winter, Sp=Spring, S=Summer, F=Frequent

Preferred Plants Species List

TREES AND SHRUBS

Acacia		
acinacea (syn A rotundifolia)	round leaved wattle	SA 1-2 1-2 300 Sa,Lo,Cl ANC R Y W,Sp
ligulata	umbrella wattle	SA, 2-4 4-6 150 Sa, Li ANC R Y Sp
oswaldii	umbrella wattle	SA, 3-5 3-5 150 Sa,Lo,Li ANC R Y S
salicina	broughton willow	SA 4-10 3-5 300 Lo,Cl ANC R Y W,Sp
Actinostrobus		
pyramidalis 2.5 – 4	Kung George;s Cypress WA	Precinct 10 / 13
Allocasuarina see also Casuarina		
cristate		Precinct 10
glauca		Precinct 10
verticillata	sheoak	SA 5-8 4-6 500 Sa,Lo,Cl,Li ANC M R,Br A,W
Atriplex		
cinerea	coastal saltbush	SA, 1 1-2 350 Sa,Li ANC M I F
nummularia	old man saltbush	SA 2-3 2-3 250 Sa,Lo,Cl,Li ANC R I F
Banksia		
integrifolia	coast banksia	Q,N,V,T 8-15 5-8 450 Sa,Lo,Cl ANC M Y F

Preferred Plants Species List

Callistemon		
Citrinus	crimson bottlebrush	Q,N,V 2-5 2-5 450 Sa, Lo, Cl ANC M R Sp, S
'Harkness'	Gawler hybrid cultivar	5-8 3-6 450 Sa, Lo, Cl, Li ANC M R Sp, S
seeberi	river bottlebrush	SA,N,V,T,Q 2-3 2-3 500 Lo, Cl ANC M Cr Sp
viminalis	weeping bottlebrush	Q, N 4-10 2-5 550 Sa, Lo, Cl, Li ANC S/M R Sp, S
Callitris		
glaucophylla syn C.columellaris	northern cypress pine	8-14 4-7 350 Sa, Lo, Li ANC M I
Casuarina		
Cunninghamiana	river oak	Q, N, NT 10-15 6-10 550 Lo, Cl ANC R I S
Correa		
reflexa	native fuschia	SA 0.5-1 1 400 Sa,Lo,Cl,Li ANC R R&Y W,Sp
Corymbia formerly Eucalyptus		
Maculate	spotted gum	Q, N, V 10-40 8-20 500 Lo, Cl ANC S/M Cr S,W,Sp
Dianella		
caerulea		
revoluta	blue flax-lily PBR hybrids	SA 0.3-1 0.5-2 450 Sa,Lo,Cl,Li ANC R B Sp, S
Enchylaena		
tomentosa	ruby saltbush	SA?0.3-1 0.5-1.5 300 Sa,Lo,Cl,Li ANC R I F
Eremophila		
alternifolia	nativehoneysuckle	SA2-3 2-3 300 Sa,Lo,Cl,Li ANC M Pk,R,Y W, Sp
divaricarta	spreading emu bush	SA 1-2 1-3 350 Sa,Lo,Cl,Li ANC M M Sp, S
glabra hybrids	tar bush	SA 1 1-2 350 Lo, Cl, Li ANC R Y/O F
Eucalyptus		
brockwayii	dundas mahogany	10-15 8-10 250 Sa, Lo, Cl ANC M Cr A
camaldulensis	river red gum	SA 15 15 * Lo, Cl ANC R W S
cladocalyx nana	bushy sugar gum	SA 6-12 5-10 400 Lo, Cl, Li ANC M Cr S
cornuta	yate gum 8-15 8-12 400	Sa, Lo, Li ANC M Y W, S
diversifolia	SA coastal white mallee	SA, V, W ?2-10 2-8 350 Sa, Lo, Li ANC M Cr W, Sp
ficifolia		
gracilis	yorrell	SA, N, V, W 3-9 3-8 250 Sa, Lo, Li ANC M W A,W,Sp
largiflorens	river box	6-20 6-15 350 Lo,Cl ANC R W Sp,S
leucoxylon ssp leucoxylon	S.A. blue gum	SA,N,V 8-30 8-25 500 Lo, Cl ANC R Cr,Pk,R A, W
leucoxylon 'Rosea'	pink-flowered blue gum	SA,N,V 8-20 8-18 500 Lo, Cl ANC R R,Pk,Cr A,W,Sp

Preferred Plants Species List

occidentalis	flat-topped yate	10-20 8-16 350 Cl,Lo ANC R Cr A,W
platypus var heterophylla	coastal moort	3-8 3-8 350 Sa,Lo,Cl,Li ANC M Y Sp, S
sargentii	salt river gum	W 7-10 6-9 300 Sa,Lo,Cl,Li ANC R Cr Sp
sideroxylon 'Rosea'		
spathulata	swamp mallet	6-10 6-10 350 Sa,Lo,Cl,Li ANC R Cr Sp, S
Grevillea		
lavandulacea	*Mt Arkaroola* cream flowered form	SA ??0.6 0.6 500 Sa,Lo,Cl AN/C R Cr W/Sp
rosmarinifolia	*nana* dwarf rosemary grevillea	N,V 1-1.5 1-1.5 450 Sa,Lo,Cl ANC R Pk Sp
Hakea		
paniculate	hakea	SA 1-3 2-4 600 Lo, Cl AN/C M Y A, W
Hardenbergia		
violacea	native lilac	SA 1.5-2 2-3 500 Sa, Lo, Cl ANC M Pu W, Sp
Kunzea		
ambigua	white kunzea	N,V,T 1-2 1-3 550 Sa, Lo ANC M W Sp, S
ambigua dwarf	dwarf white kunzea	1.2 1.2 500 Sa,Lo,Cl ANC M Cr,W Sp,S
Leptospermum		
continentale syn.L juniperinum	prickly tea tree	SA, 1.5-4 2-4 500 Sa, Lo, Cl AN R W Sp, S
Melaleuca		
armillaris	bracelet honey myrtle	N,V 3-8 3-5 450 Sa, Lo, Cl ANC M Cr Sp
armillaris	*nana* dwarf form of above cultivar	2-3 1-2 450 Sa, Lo, Cl ANC M Cr Sp, S
bracteata	white cloud tree	SA, 3-8 3-6 600 Lo, Cl ANC M Cr S
decussata	cross-leaved honey myrtle	SA2-5 2-4 450 Lo, Cl, Li ANC M Pu Sp, S
hamulosa		2.5-4 2-4 400 Sa,Lo,Cl ANC R Pk/Pu W,Sp
huegelii	chenille honey myrtle	3-4 2-5 500 Sa,Lo,Cl,Li ANC M W, Pk Sp, S
lanceolata	dryland tea tree	SA 3-8 3-5 250 Sa,Lo,Cl,Li ANC R Cr Sp, S
linariifolia	snow in summer	SA 5-7 3-5 650 Sa, Lo Cl AN M W Sp, S
microphylla		2-3 2-3 500 Sa, Lo ANC M Cr Sp
nesophila	western honey myrtle	W 2-5 2-4 450 Sa,Lo,Cl,Li ANC M Pu/Pk Sp, S
nesophila dwarf	dwarf honey myrtle cultivar	1-1.5 1-1.5 500 Sa,Lo,Cl,Li ANC M Pu/ Pk Sp, S
Myoporum		
insulare	boobialla	SA 3-5 3-5 350 Sa, Lo, Li ANC M W Sp
Orthrosanthus		
Multiflorus	native iris	SA 0.3-0.6 0.4-1 450 Sa,Lo,Cl/Lo ANC M B Sp
Pultenaea		
Daphnoides	longleaved bush-pea	SA,Q,N,V,T 1-2 0.5-1 550 Sa, Lo, Cl AN/C M Y/R Sp

Preferred Plants Species List

largiflorens	twiggy bush-pea	SA,N,V 1-1.5 0.5-1.5 550 Sa, Lo, Cl AN/C M Y/R W,Sp
Scaevola		
crassifolia		SA, 1 1 300 Sa,Lo, ANC M B Sp,S
Senna		
artemisioides ssp artemisioides	silver cassia	SA ?1-1.5 1-1.5 250 Sa, Lo, Li ANC M Y F
Westringia		
dampieri	shore westringia	SA1 1 450 Sa, Lo ANC M W/Pk Sp, S
fruticose	native rosemary	2-3 2-3 450 Sa,Lo,Cl,Li ANC M W/Pu W,Sp
GROUNDCOVER PLANTS		
Atriplex		
semibaccata	Berry saltbush	SA 0.1-0.3 1-3 300 Sa,Lo,Cl ANC R I F
suberecta	Lagoon saltbush	SA 0.1-0.6 1-2 300 Sa,Lo,Cl ANC R I F
Calytrix		
G *tetragona (prostrate)*	prostrate fringe myrtle	0.3 1.5 400 Sa,Lo,Cl,Li ANC M W W,Sp
Correa		
'*Dusky Bells'* cultivar		0.2-1 0.6-3 550 Sa,Lo,Cl,Li ANC M Pk S, A
reflexa var nummularifolia		SA 0.1-0.5 0.6-2 450 Sa, Lo, Cl ANC M Y W,Sp
Disphyma		
crassifolium ssp clavellatum	round-leaved pig face	0.5 1 300 Sa,Lo,Cl,Li ANC R I Sp
Einadia		
nutans	nodding saltbush	0.5 1 300 Sa,Lo,Cl,Li ANC R I Sp
Eremophila		
Biserrate	prostrate eremophila	0.1 1.5-3 350 Lo, Cl, Li ANC R G W,Sp
densifolia	dense leaved eremophila	W 0.1-0.5 1-2 350 Lo, Cl, Li ANC M Pu W,Sp
glabra prostrate (burgundy)	common emu bush cultivar	0.5 2 350 Sa,Lo,Cl,Li ANC M Bu Sp,S
glabra prostrate (yellow)	common emu bush	0.2 1-2 350 Sa,Lo,Cl,Li ANC M Y W,Sp
glabra 'Roseworthy'	common emu bush	SA 0.1 1-2 350 Sa,Lo,Cl,Li ANC M O W,Sp
maculata procumbent	spotted emu bush cultivar	0.5 2 350 Lo,Cl,Li ANC R R/Pk W,Sp
Frankenia		
pauciflora var fruticulosa	southern sea heath	SA 0.1 1 250 Sa, Lo, Li ANC M Pk Sp

Preferred Plants Species List

Goodenia		
varia	sticky goodenia	SA 0.1-0.6 0.5-1.5 350 Sa,Lo,Cl,Li ANC M Y W,Sp
Grevillea		
'*Gaudichaudi'* cultivar		0.1-0.3 2-3 600 Sa,Lo AN/C R R Sp,S
Hibbertia (cont.)		
platyphylla ssp platyphylla	Marion bay guinea flower	SA 0.3 0.5 400 Sa,Lo,Cl,Li ANC M Y Sp
Kennedia		
prostrata	running postman	SA, 0.1 1.5-4 450 Sa,Lo,Cl ANC M R,Y W,Sp
Kunzea		
pomifera	muntries	SA, 0.2 2-4 500 Sa, Lo, Li ANC M Cr W, Sp
Leptospermum		
continentale 'Horizontalis' cultivar		0.5-1.5 2-4 500 Sa, Lo, Cl ANC R W W,Sp
Melaleuca		
violacea prostrate		0.5 1.5 500 Sa, Lo, Cl ANC M Pu Sp
Myoporum (5 yr replacement***)***		
parvifolium (broad leaf)	creeping boobialla	SA 0.2 2 350 Sa,Lo,Cl,Li ANC M W Sp, S
parvifolium (fine leaf form)	creeping boobialla	SA 0.3 2 350 Sa,Lo,Cl,Li ANC M W Sp, S
parvifolium (pink flowers)	creeping boobialla	SA 0.2 2 350 Sa,Lo,Cl,Li ANC R Pk W,Sp
parvifolium purple leaf form	creeping boobialla	SA, 0.2 2 350 Sa,Lo,Cl,Li ANC M W W,Sp
Rhagodia		
spinescens ssp deltaphylla	creeping	0.5 2-3 300 Sa,Lo,Cl,Li ANC R I A,W
Viola		
hederacea	native violet	SA 0.2 1-4 600 Lo,Cl ANC R W&Pu F
G *hederacea 'Baby Blue'* cultivar		0.1 0.5-1 600 Lo,Cl AN/C M B F

CLIMBERS

Hardenbergia		
violacea 'Happy Wanderer' cultivar		2-4 500 Sa,Lo, Cl ANC M Pu W,Sp
Kennedia		
rubicunda dusky	coral pea	8-10 450 Sa,Lo,Cl ANC M R W,Sp

Preferred Plants Species List

GRASSES, RUSHES AND SEDGES

Aristida		
Behriana	brush wiregrass	SA, 0.15-.3 0.2-0.3 300 Sa Lo Cl ANC R Cr Sp,Au
Austrostipa (syn. Stipa)		
elegantissima	elegant spear-grass	SA 1 1 350 Sa, Lo, Cl ANC R G/Br W,Sp
nitida	balcarra grass	SA 0.7 0.5 350 Sa,Lo ANC R G/Br W,Sp
nodosa		SA 1 1 350 Sa,Lo,Cl ANC R G/Br W,Sp
Carex		
appressa	tall sedge	0.5-1 400 Sa,Lo,Cl ANC R Br Sp,S
tereticaulis		1-1.5 1 400 Sa,Lo,Cl ANC R Br Sp,S
Chloris		
truncata	windmill grass	SA 0.3-0.5 0.2-0.5 350 Sa, Lo, Cl ANC M Br Sp, S
Cymbopogon		
Ambiguus	lemon-scented grass	SA 03-1 0.1-0.3 400 Sa, Lo, Cl ANC R Cr W, Sp
Cyperus		
Exaltatus	tall flat sedge	SA 0.3-1 0.3-1 600 Sa,Lo,Cl ANC R Br F
gymnocaulos	spiny flat sedge	SA 0.2-0.7 0.5-1 400 Sa,Lo,Cl ANC R Br W,Sp,S
vaginatus	flat sedge	SA ?0.3-1.5 0.5-1 400 Sa,Lo,Cl ANC R Br Sp,S,Au
Enneapogon		
nigricans	nigger-head	SA 0.2-0.5 0.5 350 Sa, Lo,Cl ANC R Br/Bl Sp,S
Isolepsis		
nodosa	knobby club rush	SA 0.5-1.5 0.5-2 400 Sa,Cl,Li,Lo ANC R Br F
Juncus		
kraussii	sea rush	SA 0.5-1 0.5-1.5 400 Sa, Lo, Cl ANC R Br F
pallidus	pale rush	SA 0.5-2 0.5-1 500 Sa, Lo, Cl ANC R Br Sp, S
Microlaena		
stipoides	weeping grass	0.1-0.7 0.2-1 400 Sa, Lo, Cl ANC M G/Cr Sp, S

Preferred Plants Species List

Poa		
Labillardieri	tussock grass	0.3-1 0.3-0.7 400 Sa, Lo, Cl ANC R G/Cr Sp, S
Poiformis	blue tussock grass	SA 0.6-1.2 0.5-1.5 350 Sa,Lo,Cl ANC R Cr Sp,Su
Themeda		
triandra	kangaroo grass	SA 0.4-1 0.5 450 Sa, Lo, Cl ANC R Br F

THEME 5: WETLANDS : Precinct 10/13.

View of shallow reedbed, good cover of *Bolboschoenus caldwellii* and *Marsilea drummondii,* island at upper right lacking tree/shrub planting, overgrown with kikuyu.

Main Wetland; good species diversity at wetland edge.

Main Wetland; showing desirable species diversity at wetland edge .

It is vital that a detailed planting design be prepared for any intended wetland planting, so that the selection of species and the positioning of the selected species in the landscape will achieve the desired results.

Preferred Plants Species List

Clumping Species
Carex appressa
Cyperus gymnocaulis* *Salt tolerant*
Cyperus vaginatus
Gahnia filum *Salt tolerant*
*Juncus kraussii** Very salt tolerant, plant up to 100 mm above static WL
Juncus pallidus
Juncus radula
Lythrum salicaria To 1.5 m ht, showy purple flowers
*Triglochin procerum** Tuberous plant, foliage contrast (long strap leaves), also plant in shallow reedbeds

Spreading Species
Carex bichenoviana* *May spread into salt scald areas*
Centella cordifolia Low 'understory' species
Crassula helmsii Low 'understory' species
*Eleocharis acuta** Plant widely wherever not established
Hydrocotyle verticillata Low 'understory' species
Lilaeopsis polyantha Low 'understory' species
*Marsilea drummondii** Plant widely wherever not established
Persicaria decipiens
Ranunculus amphitrichus Low 'understory' species
*Schoenoplectus pungens** Salt tolerant, may spread into salt scald areas, plant thr'out all wetlands and swales
Triglochin striatum Salt tolerant, low 'understory' species
Vallisneria spiralis Submergent, plant into deeper open water

Water Edge
Callistemon specious
Callistemon salignus
Callistemon viminalis Semi-weeping
Eucalyptus camaldulensis Moderate salt tolerance
Melaleuca halmaturorum Highly salt tolerant

Riparian Banks and High Ground
Acacia salicina Moderate salt tolerance
Acacia stenophylla Salt tolerant
Eucalyptus camaldulensis Moderate salt tolerance
Eucalyptus largiflorens High salt tolerance
Melaleuca lanceolata Moderate salt tolerance
Myoporum montanum Moderate salt tolerance

Lighting Fixtures

Area	**Company**		
	Thorn	**Louis Poulsen**	**Sylvania**
Carpark	Lemnis 65	Orbiter Maxi	
Road	Lemnis 65	Orbiter Maxi	
Main Path	Lemnis 65Avenue F	Orbiter MaxiKipp	***Yarra***
Minor Path	Chartor Bollard	***Orbiter MiniKipp***	Bollard
Building Mounted	***Plazora***		Yarra
Column	Column		

Note: Preferred fixtures shown in ***bold***.

Lighting Fixtures

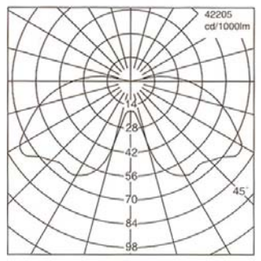
Yarra

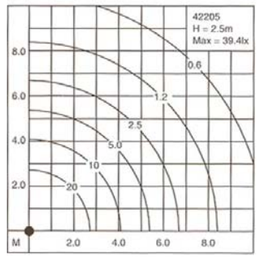
Pole Top Luminaire

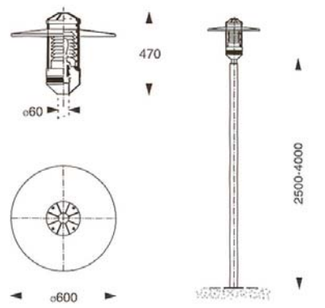
IP 54 Splashproof
conforming to DIN, VDE, IEC.
Class I.

These luminaires are designed with rotationally symmetrical light distribution for pole heights of 2500-4000 mm. providing a pleasant glare free lighting system suitable for private and public areas, hotel, parks, gardens and pedestrian precincts.

- Vandal resistant
- Corrosion resistant die cast aluminium alloy
- Stainless steel screws
- Ultraviolet stabilised polycarbonate diffuser in opal white or clear with anodised high purity aluminium reflector
- Weatherproof and durable silicone rubber gasket
- Integral control gear
- Ultraviolet stabilised polyester powder coat finish in Black RAL 9005 as standard
- Other colours are available upon consultation
- To suit spigot 60mm diameter and a minimum 60mm length







SLA Cat No.	Type	Lamp
S42202	Mercury vapour	HSLBW50
S42203	Mercury vapour	HSLBW80
S42204	High pressure sodium	SHP50/CO/I
S42205	High pressure sodium	SHP70/CO/I
S42206	Metal halide	MP75/C/U
S42207	Metal halide	MP100/C/U

Preferred main path lighting: Sylvania - Yarra

Lighting Fixtures

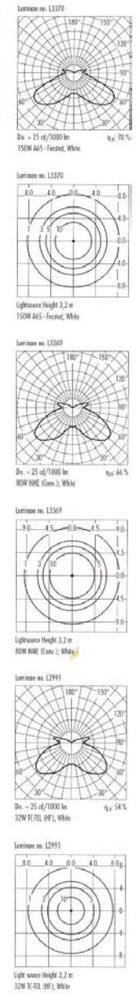
Design Jens Møller-Jensen

Colour/Surface: White or grey. Powder coated.
Anti-glare ring: White version: opal. Grey version: grey. **Socket:** white or orange. **Materials:** **Anti-glare ring:** injection moulded polycarbonate. **Console:** cast aluminium. **Diffuser:** injection moulded clear polycarbonate. **Top shade:** compression moulded, glass fibre. **Mounting:** Fixture head designed for Ø 60mm pole. Orange socket version fitted with 3.5m cable as standard.
Weight: Max. 7.5kg. **Class:** **Ingress protection code:** IP44.
Electric shock protection: Class I and Class II. Designed according to vandal-proof Class II.

Product variants

Light source	Colour/Surface	Electric shock protection	Socket cover
150W A65 - Frosted/Clear (E27)	Grey	Class I	White
32W TC-TEL (GX24q-3) (HF)	White	Class II	Orange
50W HME (E27) (Conv.)			
80W HME (E27) (Conv.)			
50W HSE-E (E27) (Conv.)			
70W HSE-E (E27) (Conv.)			
50W HSE-I (E27) (Conv.)			
70W HSE-I (E27) (Conv.)			

Variant notes: The HSE-I class I versions are only available with orange socket covers. The HSE-E class I versions are only available with white socket cover. Incandescent, HME and HSE-E/HSE-I class II versions are only available with orange socket cover. TC-TEL is only available in class II.
Info notes: The control gear for class I versions is placed in the fixture head. Control gear for TC-TEL class II versions is placed in the fixture head. Control gear for HME and HSE class II versions is to be ordered separately and to be placed in the pole. The vapour lamp versions with control gear in the fixture head are phase-compensated.
Spare parts: Diffuser polycarbonate, clear 57 47 291 096; Shade main, grey 57 47 291 106; Shade main, white 57 47 291 119.



Preferred minor path lighting: Louis Poulsen - Orbiter Mini

Lighting Fixtures

	TC-D (FSQ)	G24d-3	26W
	HSE (SE)	E27	70W
	HIE (ME)	E27	70W
AS/NZS 60598		Class I Electrical	
	IP54		
	IP44 wall bracket/pole versions		

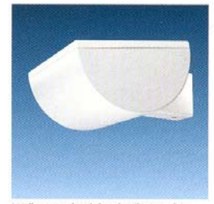
Semi-cylindrical luminaire for lighting footpaths, car parks, building facades, porches and entrances, under canopies, arches and signs

- Light output can be directed upwards or downwards
- Flat glass cover for minimum spill light
- Multi-option mounting, bracket or pole
- Adjustable reflector and bracket allows distribution to be tailored for facade lighting

Materials/Finish
Body, wall bracket and pole adaptor: Die-cast aluminium, finished stove enamelled white.
Reflector: Specular anodised aluminium (reversible in large bracket version).
Glass cover: Toughened soda lime held in frame by four captive stainless steel allen screws. Weather proofing provided by a silicone rubber gasket between frame and body

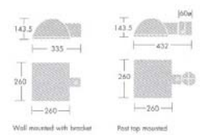
Installation/Mounting
Direct wall fixing. Through one flat end with fixing centres at 150mm and 130mm respectively. Bracket mounting (large version only). Bracket adjusts for tilting up to 10° away from the wall. Bracket houses 3 way terminal block which connects to body via plug and socket. Fixing centres are 70mm x 45mm. Reflector can be reversed and lamp position moved to adjust beam spread when lighting vertical surfaces. For post-top mounting of bracket version use column adaptor for 60mm Ø spigot.

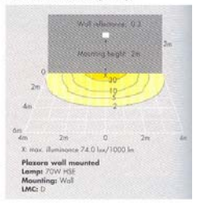
Specification
To specify state:
Semi-cylindrical luminaires with pressure die-cast aluminium body, integral gear, flat glass and upward or downward directional light control for mounting on bracket fixed to wall/direct fix to wall/post top.
As Thorn Plazora.



Wall mounted with bracket (large only)

Post top mounted (large only)





Ordering Guide Lamps to be ordered separately

Description	Ilcos Code	Socket	Weight (kg)	Cat. No.	SAP Code
PLAZORA BRACKET MOUNTED HIE 70W	ME	E27	5.3	PLBGC 1070A	96015099
PLAZORA BRACKET MOUNTED TC-D 26W	FSQ	G24d-3	4.6	PLBG 126A	96015095
PLAZORA BRACKET MOUNTED HSE 70W	SE	E27	5.3	PLBG 1070A	96015097
Attachments					
PLAZORA COLUMN POLE ADAPTOR			0.9	PBPAA	96010268

PLBG types are pole mountable using PBPAA. Small size available to special order.

Preferred building mounted lighting: Thorn - Plazora

Furniture

Element	**Company**			
	Town and Park Furniture	**Urban Art Projects**	**Street Furniture Australia**	**Other**
Bollards – fixed and lay down				***Street and Park Furniture***
Seats				
-With backs	***SSD 'Metro'***	EdgeCampus		
-Bench	WBTD	EdgeCampus		
-Group	SSD			
-Wall	SSD/PM			
Platform Seat TSSD	***TSSD 'Metro'***			
Tables and Seats	***TSD 'Metro'***		Campus	
Bins				
-General waste			***LB8 Oculus***	***Street and Park Furniture*** – Square bin
-Cigarette				***North Terrace*** (Adelaide City)
Drinking Fountains		Parkland	***DF4***	
Bicycle Racks				***North Terrace***
Tree Grates		Campus		
Tree Guards				

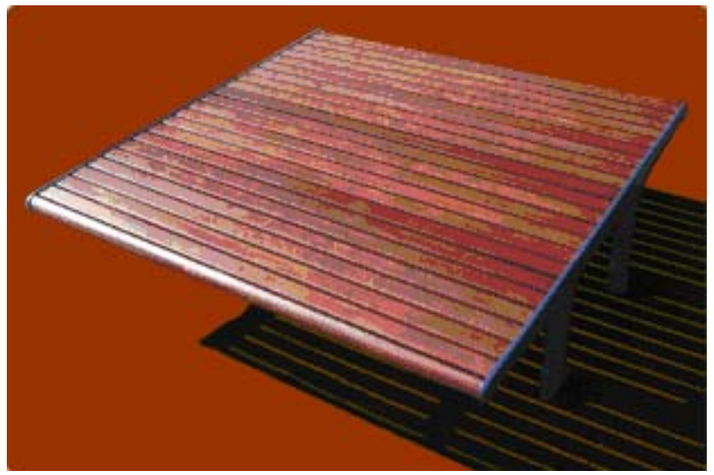
Note: Preferred fixtures shown in ***bold***.

Furniture

Preferred bollards - fixed and lay down: Street and Park Furniture

Preferred seats with backs: Town and Park Furniture - SSD '*Metro*' seat in aluminium (2m-6m), or timber and aluminium (2-4m)

Furniture



Preferred platform seat: Town and Park Furniture - TSSD '*Metro*' Table Seat in stainless steel and hardwood ecotimber planking (up to 4m lengths), or stainless steel and aluminium planking (up to 6m lengths).

Preferred table setting: Town and Park Furniture - TSD '*Metro*' Wheelchair access table and bench setting in stainless steel and hardwood ecotimber planking (up to 4.5m lengths), or stainless steel and aluminium planking (up to 6m lengths).

Furniture

Preferred bin 1: Street Furniture Australia - LB8 Oculus

Preferred bin 2: Street and Park Furniture - Square bin

Furniture

DF4, Circular Quay. Design: Duncan Trevor-Wilson & CM Group

DF4 spout detail

DF4 Fountainhead ▶
Cast aluminium body, regulated water flow, easy operate push-button, ground drain.

Preferred drinking fountain: Street Furniture Australia - DF4

Preferred bicycle rack: purpose built, North Terrace

Paving Types - Existing & Preferred

The following table identifies existing paving and recommended paving for future use in the campus.

Precinct No. & Name	Existing Paving Type	Preferred Main Paving Type	Preferred Secondary Paving Type
A2 - Town Walk - Main Pedestrian Walkway	Type 1, 2, 3, 6	Type 6	Type 7
A3 - Public Promenade along University Boulevard	Type 2, 3, 4	Type 5	Type 3
A5 - Library Precinct	Type 1	Type 1 to match existing	Type 6 Timber Decking
A6 - GP Courtyard	Type 1	Type 1 to match existing	Type 6
A9 - Northern Gateway Precinct	Type 4	Type 5	Shot-blast existing paving
A10 - Wetlands Precinct	Type 5 along Mawson Lakes Boulevard	Type 5	Gravel paths
A12 - University & Mawson Lakes Boulevard Corner Precinct	Type 1, 5	Type 1	Type 5
A13 - Building M Green / Meadow	Type 1, 2, 3,	Type 6	Type 3

Paving Types - Palette

The following table identifies existing paving and recommended paving for future use in the campus. Altogether there are 7 paving types. The recommended paving types proved an integrated paving within each precinct.

Example	Paving Type	Existing	Recommended	Example	Paving Type	Existing	Recommended
	Type 1: *Concrete Unit Paving* C&M Flag Stone - Claret Ash 230x230x50mm pavers laid in stretcher bond	Yes	Preferred Main Type in Precincts A5, A6, A12.		Type 5: *Shot-blasted / Exposed Aggregate Paving*	Yes	Preferred Main Type in Precincts A3, A9, A10. Preferred Secondary Type in Precincts A9, A12.
	Type 2 : *Precast Large Format Concrete Unit Paving*	Yes			Type 6: *Concrete Unit Pavers with Honed Finish* C&M Citistone 1039 semi-honed 400x400x60mm feature paver	Yes	Preferred Main Type in Precincts A2, A13. Preferred Secondary Type in Precinct A5, A6.
	Type 3: *Patterned Concrete Unit Paving* C&M Flag Stone - Claret Ash 230x230x50mm laid in square bond with C&M Accent/Header, Trupave - Charcoal feature pavers	Yes	Preferred Secondary Type in Precincts A3, A13.		Type 7: *Stone Paving* Kanmantoo Bluestone, for feature strips	No	Preferred Secondary Type in Precinct A6, *A2.*
	Type 4: *In situ Concrete*	Yes					

References

Dober R P, 2000. Campus Landscape: Functions, Forms, Features. John Wiley & Son.

Harris, Rhondda, 2003. Aboriginal Heritage Survey, Areas of Mawson Lakes Campus, University of South Australia. Unpublished report for Property Unit, University of South Australia, Adelaide, South Australia.

Denton Corker Marshall, 2003. Mawson Lakes Campus Masterplan 2002- 2010. Unpublished report for University of South Australia, Adelaide, South Australia.