Design and Development Controls - Landscape

It's part of our Monash Masterplan

MONASH University

Buildings and Property | July 2025

Contents

Part 1 - Overview
1.1 Introduction
1.2 About the DDC-L
1.3 Landscape Character
1.4 Landscape Palette Application
1.5 Public Art

Part 2 - Materials Palette
2.1 Overview
2.2 Paving
2.3 Synthetic Flooring
2.4 Decking
2.5 Tree Protection
2.6 Drainage
2.7 Tactile Indicators
2.8 Fences
2.9 Stone
2.10 Retaining Walls and Edges
2.11 Garden Bed Barriers
2.12 Shelters
2.13 Landscape Timber
2.14 Vehicular Infrastructure

Part 3 - Planting Palette
3.1 Overview
3.2 Landscape Classification
3.3 General Guidelines
3.4 Maintenance Considerations
3.5 Plant Selection
3.6 Species Palettes

Part 4 - Furniture Palette
4.1 Overview
4.2 Furniture
4.3 Lighting

It's part of our Monash Masterplan

Monash University recognises that our Australian campuses are located on the unceded lands of the people of the Kulin Nations, and pays its respects to their Elders, past and present. We respect the ancient and continuing cultures of the Aboriginal and Torres Strait Islander peoples of Australia and their connection to Country, and creative practices on these lands, for over 60,000 years.

Landscapes play a crucial role in communicating Country and its relation to Indigenous peoples, as such the University is committed to ensuring Indigenous peoples, culture and knowledge is recognised, respected and included within our processes as it pertains to landscape.

Part 1 - Overview

1.1 Introduction

At Monash, the landscapes and built environments serve as the primary backdrop for learning, teaching, research, enterprise, and community engagement. Monash's campuses consist of exemplary landscapes that are welcoming, inclusive and distinct, underpinned by a consistent implementation of high quality materials, furniture and planting. This bushland nature is expressive of Monash's landscape identity, creating memorable and distinct university experience for users.

It's all part of our Monash Masterplan.

www.monash.edu/masterplan

Landscapes are the fabric of the University's campus environments. They provide the settings for its buildings and teaching spaces, and help define people's impressions of each campus, and the organisation.

The Design and Development Controls – Landscape (DDC-L) sets out the University's requirements for the planning, design and detailing of landscape works at all Monash campuses in Australia. This document has been assembled to ensure consistency in quality, aesthetics and performance is achieved across the varied landscapes of which the University is comprised.

The DDC-L is meant to aid designers, consultants and contractors in understanding our vision for Monash's landscapes and empower users to make informed decisions about how to approach projects in a way which aligns with the broader Masterplan and other Monash policy documents.

The DDC-L is part of the Monash Masterplan suite of documents and must be considered alongside other statutory and Monash University documents, including:

- Campus Masterplans
- *Nature+*
- *Understanding Country*
- *Monash University Signage Guidelines & Master Palette*
- *Monash Design and Construction Standards (MDCS)*
- *Public Art Masterplan*

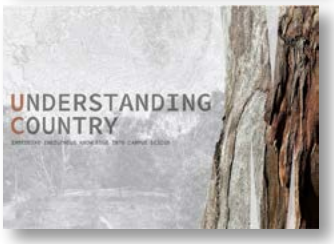
The intent of the DDC-L is to complement this suite of documents by providing further detail on specific aspects of landscape design; it defines the University's adopted planting approach and incorporates the University's standard palettes for materials and furniture.

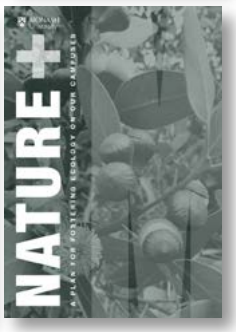
The palettes here within seek to establish a continuity of landscape forms, pavements, furniture and vegetation across all Monash Australian campuses, whilst allowing for differentiation between them.

The document is divided into four parts, all of which aim to guide users in their design decision-making:

Part 1 - Overview
Part 2 - Materials Palette
Part 3 - Planting Palette
Part 4 - Furniture Palette

Each part defines the general approach for adoption across all campuses as well as campus specific treatments where applicable.





1.2 About the DDC-L

OVERARCHING OBJECTIVES
The following eleven objectives broadly outline Monash University's approaches, priorities and areas of interest with regards to the delivery and maintenance of our landscapes. Outdoor public amenity aims to enhance user experience in every way, providing visitors and daily users with memorable, fit-for-purpose and singular university experience. A holistic application of these objectives will enable designers to meet the University's expectations for the delivery and legacy of campus environments, and help us create multi-faceted landscapes that can respond to the demands of high daily use in an ever-changing environment.

EDUCATION AND LEARNING
Our landscapes are to function as 'living labs' and promote outdoor place-based learning, fostering a stronger sense of connection to place. Providing more year-round occupiable outdoor space will also further a communal sense of connect to and responsibility for the environment.

BIODIVERSITY ON COUNTRY
Monash seeks to proliferate biodiversity across all campuses. It is expressed through connection to place, a respect for flora and fauna, and an understanding that our health is contingent on that of our environments and their regenerative capacity.

VEGETATION
An Australian native plant palette is employed to align and with the strategic objectives of the Monash University Campus Masterplans. Campuses should apply this in a site-responsive manner to achieve place-specific characters and

IDENTITY AND BRANDING
Application of consistent graphic language (signage, colour and logo use) that is aligned as an identifiable brand. Use of the Monash University logos must be coordinated with University Marketing and Communications (UMAC) prior to application.

EQUAL ACCESS
Endeavour to provide universal accessibility across all campuses to create a welcoming, inclusive campus for all, with level transitions and gradients meeting Disability Discrimination Act (DDA) standards. Ergonomics, comfort and safety must also be seamlessly integrated into landscape design.

HERITAGE
Heritage considerations within the landscape context include the accommodation of heritage trees, retention and uplift of significant historical landscapes, as well as the thoughtful design of landscapes adjacent to existing heritage buildings.

WAYFINDING
Facilitate and encourage movement on campus by providing clear and legible wayfinding with good directional signage, continuous materials and character along major routes. Intuitive navigation must be fostered, and visual clutter minimised.

MAINTENANCE
Maintenance is the key factor in ensuring a high-quality campus environment. Material choices and planting design must consider ongoing maintenance requirements and to ensure optimal conditioning and longevity is achieved.

SAFETY AND SECURITY
Campuses should be safe places for users day and night. Best practice design principles, robust material/furniture use, well considered lighting opportunities, Emergency Help Points and CPTED principles should be universally applied.

SUSTAINABILITY
Palettes should consider circularity and provenance of materials. Low embodied energy and best-practice water sensitive urban design as well as opportunities to deliver roof gardens, green walls and urban agriculture should be explored.

MOVEMENT
Clear, easy movement along primary walks and secondary paths is a priority. Path widths, lighting, seating and other street furniture are to be selected to ensure the high-quality public outcomes.

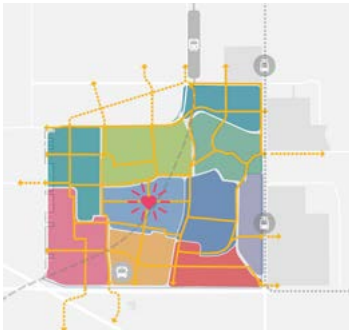
IMAGES (clockwise from top left):
1/ *Well integrated public realm and architectural interface, Senior Physics building, CL*
2/ *Strong landscape character and integrated signage, Biochemistry Laboratories,CL*
3/ *Primary Walk system, public art on show and native landscape character, New Horizons building, CL*

1.3 Landscape Character

MASTERPLAN ALIGNMENT
Aligning the core ambitions of the DDC-L with Monash University Campus Masterplans is essential to achieve maximum impact. Creating a stronger sense of campus identity, making further improvements to the public realm offering, enhancing built form and infrastructure and improving access and wayfinding will collectively enable a coordinated outcome to be achieved. Making strong connections with strategic neighbours will also help to make our landscape offerings more robust, meaningful, context-responsive and able to reach a broader audience.

ENRICH THE CO-CURRICULAR AND CAMPUS LIFE

CREATE VIBRANT RESIDENTIAL NEIGHBOURHOODS



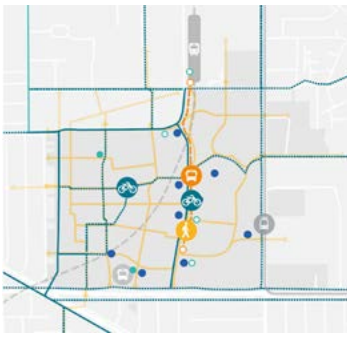
GROW AND STRENGTHEN THE IDENTITY OF PRECINCTS

CELEBRATE DISTINCT LANDSCAPE CHARACTER NETWORKS

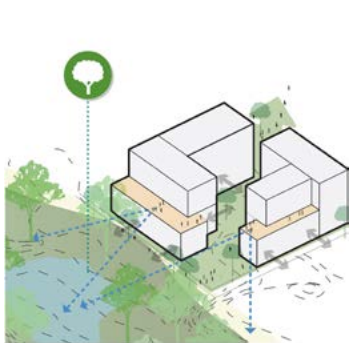
CELEBRATE THE EDGE AND CREATE GREEN CONNECTIONS

CREATE PLACES AND WALKS THAT ARE CLIMATE RESILIENT

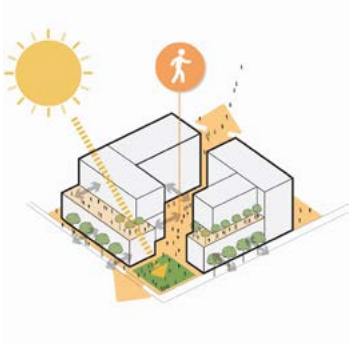
EXTEND PEDESTRIAN WALK NETWORK INTO THE NE PRECINCT AND SURROUNDING NODES



UPGRADE SCENIC BOULEVARD AS A HIGH AMENITY SUSTAINABLE TRANSPORT CORRIDOR

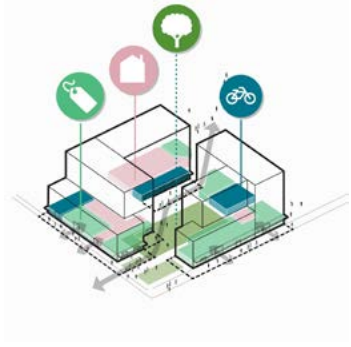


CELEBRATE CONNECTION TO COUNTRY THROUGH LANDSCAPE AND BUILT ENVIRONMENT



STRENGTHEN CONNECTION TO PLACE

CREATE A MEMORABLE SUSTAINABLE CAMPUS

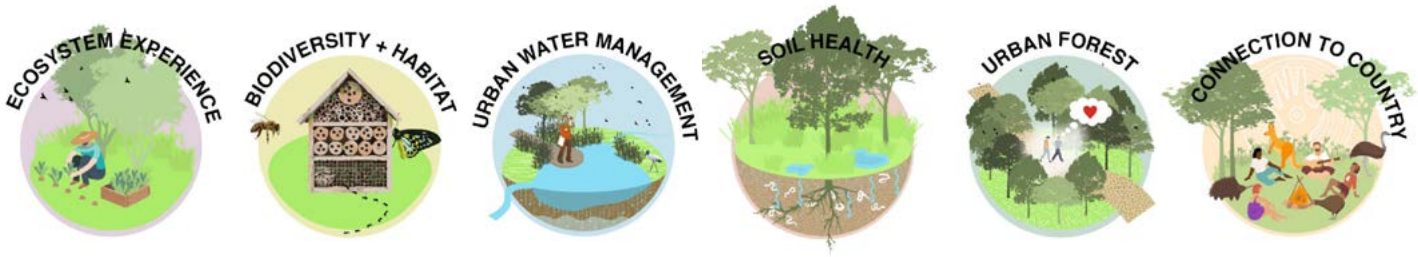


IMPROVE RELATIONSHIPS BETWEEN BUILDINGS AND PUBLIC REALM

1.3 Landscape Character

REFERENCING *NATURE+* AND *UNDERSTANDING COUNTRY*

Further to aligning with Monash University Campus Masterplans, core themes outlined in Monash University's *Nature+* and *Understanding Country* strategies will enable a more genuine and thoughtful connection with place and enable the ecological uplift the University aspires to achieve to take place across all our campuses.



NATURE+

Nature+ takes a holistic approach and endeavours to incorporate 6 themes:

- Connection To Country
- Urban Forest
- Biodiversity and Habitat
- Urban Water Management
- Soil Health
- Ecosystem Experience

Each theme has a series of goals and actions associated with it and collectively they address numerous UN Sustainable Development Goals. These themes have been identified to support a better understanding of Country and in so doing, foster a sense of care and respect for the landscapes around us.
This plan is intended as a framework for action to help improve ecological diversity with modest and achievable goals.

Scientific rigour, collaboration and care for Country underpin these themes and manifest as projects which demonstrate the same care, commitment to empirical evidence and long term longevity of biodiversity on our campuses.
The delivery of the *Nature+* plan is intended to be a collaborative process. Teaming up with the abundance of knowledgeable people at Monash as well as with significant neighbours such as the CSIRO and relevant city councils will enable a more considered outcome.

**For more detailed information, please refer to full Nature+ Plan*

UNDERSTANDING COUNTRY

Aboriginal and Torres Strait Islander people have deep physical and spiritual connections to Country. Through generations, Aboriginal Peoples have centred their spiritual identity around caring for and maintaining Country.

Despite ongoing effects on communities as a result of colonisation, forced removals and suppression of culture, Aboriginal and Torres Strait Islander people have maintained an ongoing connection to the places from which they stem.

As custodians of these places, we have a responsibility to Country when designing and building on Indigenous land, and should treat the area and its various elemental constituents with a level of respect that acknowledges and values the embedded knowledge and practices of traditional owners and, with permission, use this knowledge to work towards a more inclusive and culturally aware campus. Consulting with the correct people when working on land and water and deeply listen to Indigenous voices as a normative part of community engagement should be incorporated into all projects as best practise.

Understanding Country aims to provide a foundational understanding of these complex relationships and how they can inform architectural, and built responses on Monash University campuses.

1.4 Landscape Palettes

OVERVIEW
The palettes below aim to assist designers with a kit-of-parts approach to designing landscapes at Monash University. The application of these palettes depends on their context, extent, adjacencies and the functional requirements of the space. While the DDC-L seeks to establish a strong identifiable brand for the University's landscapes, creating opportunities for improvisation, innovation and uniqueness is also a priority, helping establish our landscapes as one-of-a-kind environments which capture moments of wonder within a strong framework of consistency.

STANDARD PALETTE
Default treatment for public realm materials, forms and products is to be used in all instances unless otherwise noted. The palette establishes a minimum benchmark for quality, ensuring visual continuity across Campuses as part of the vision for an identifiable Monash brand.

Any replacement or upgrade of an item that deviates from the palette must be approved by Monash University Buildings and Property Strategic Design team. It is envisaged that over time, more sustainable and cost effective products may be found. The selection of new or replacement items will need to match or complement existing items to ensure continuity over time.

HYBRID PALETTE
For circumstances where the Standard Palette is appropriate but requires a more site-specific response, customisation is permitted and designers are to provide a contemporary interpretation of the Standard Palette.

Hybrid, appropriated applications of the Standard Palette presents opportunities for the overall approach to evolve and improve in innovation and robustness.

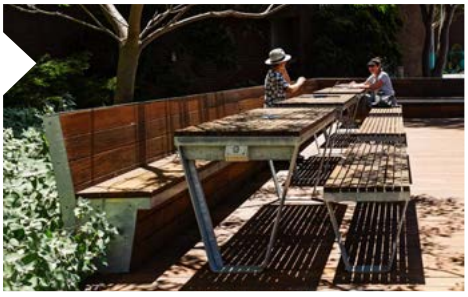
BESPOKE PALETTE
Applicable in existing and proposed courtyards and adjacent to buildings with a strong architectural presence and identity where a more considered and architecturally integrated response is required.

These spaces may deviate from the Standard Palette entirely provided quality and robustness are not compromised, and that the general intent is in-keeping with the Monash landscape aesthetic. This palette offers the opportunity for designers to push the boundaries and create one-of-a-kind moments of surprise in the landscape, and lasting impressions with the backdrop of striking architecture.

Example gradation: Seating


Standard steel picnic set, all campuses


Adapted hybrid steel picnic set, Campus Green, CL


Bespoke seating, LTB lawn, CL

Example gradation: Primary Walk Paving Surface Treatment


Standard Primary Walk paving, Exhibition Walk, CL


Hybrid Primary Walk paving, Ancora Imparo Way, CL


Bespoke Primary Walk paving, Sports Walk, CL

1.5 Public Art

Monash University's Public Artwork Collection is recognised as one of the most important and dynamic in Australia. The Public Art Masterplan captures Monash's ongoing ambition for leadership in public art curation and commissioning, the commitment to engage artists in shaping the campus environment, and its role in creating a vibrant campus experience for all staff, students and visitors.

'Public art' refers to a wide range of artistic forms, practices and contexts. Public art usually refers to works of art that are presented in the public domain. The Public Art Masterplan provides a framework for the commissioning of artworks in the public realm across Monash University campuses.

Commissions will contribute visual interest and texture to the public spaces on campus, providing focal points for creative thinking, reflection and public engagement.

Monash University celebrates the vision of contemporary artists, and the important role that art plays in framing our experience and understanding of the world. Artworks will reflect on the University as a dynamic platform for experimentation and debate of new and challenging ideas.

Design Guidelines

Ensure that capital projects for architectural and exterior spaces with significant public usage incorporate briefing documents for the siting, design and construction of a public art component, developed in collaboration with Monash University Museum of Art (MUMA) and having reference to the Public Art Masterplan. Encourage a diverse ecology of art encounters, from large symbolic works in prominent public places, to discrete works situated in local areas; Refer Monash University Public Art Masterplan.

IMAGES (clockwise from top left):
1/ *Emily Floyd, This Place Will Always Be Open 2012*
2/ *Kosloff Architecture and Monash Art Projects (MAP), External building skin and entry into Monash Building 17 2018*
3/ *Megan Cope, Weelam Ngalut (Our Place) 2019*
4/ *Ronnie Van Hout, Dayton 2014 Photo: Zan Wimberley*
5/ *Louisa Bufardeci, I Know I Don't know 2015*
6/ *Agatha Gothe-Snape,The Scheme Was a Blueprint for Future Development Programs 2015*
7/ *Leonard French, Alpha and Omega 1970*

Part 2 - Materials Palette

2.1 Overview

PURPOSE

The purpose of the palette is to ensure consistency of character and quality of materials across the campus built environment.

Objectives:

- Provide a high quality finish commensurate with a world class institution.
- Maintain and improve the visual amenity of the University's public spaces.
- Use a hierarchy of paving types to assist wayfinding and to suit the particular requirements and/or characteristics of the space.
- Deploy a family of pavements to ensure unity of experience and cohesion across and between campuses.

DESIGN PRINCIPLES

Design principles provide the foundation for the palette and future additions to it and seeks to align with Campus Masterplan ambitions.

Objectives:

- Careful consideration of material choice and its embodied energy, life cycle and robustness and maintenance.
- Promotion of a neutral standard base palette upon which site specific accents can be added.
- Ensure outcomes are fit for purpose, respond to user needs and site specificity
- Logical use of materials to allow for an intuitive uncluttered landscape language
- Promotion of best practise DDA, WSUD, CPTED principles.
- Fundamentally integrate sustainability as a overarching approach.

PROCUREMENT

Materials procurement takes time. This includes the approval of selection, siting, manufacturing and lead times.

Notes:

- Review and approval prior to manufacture must also be adhered to. Monash University Buildings and Property Strategic Design team's standard review process should be undertaken prior to commencing works.
- Bundle orders with other projects where possible to gain cost efficiencies.
- Contact SD team for supplier suggestions.
- Ensure University's probity guidelines are followed.

APPLICATION

The palettes aim to assist designers with cohesive and clear guidelines and facilitate the design of high quality landscapes at Monash.
The application of these palettes depends on the context, extent, adjacencies and the functional requirements of the space. While the DDC-L seeks to establish a strong identifiable brand for the University's landscapes, creating opportunities for improvisation, innovation and uniqueness in appropriate locations is also a priority, helping establish our landscapes as one of a kind environments which capture moments of wonder within a strong framework of consistency.

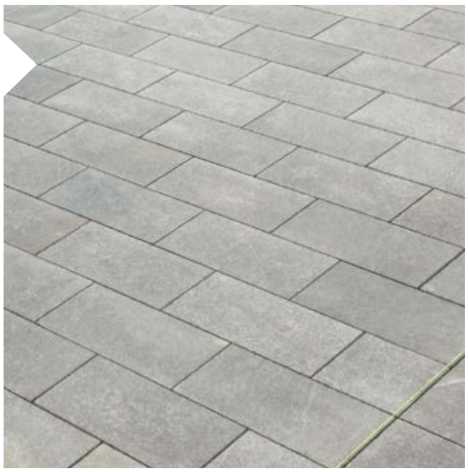
Standard Application: collection of base materials which provide unity and a neutral framework applicable across all campuses.

Hybrid Application: for circumstances where the Standard Palette is appropriate but requires a more site-specific response.

Bespoke Application: for limited circumstances where a unique landscape character is justifiable and approved prior by Buildings and Property.

IMAGES (clockwise from top left):
1/ *Green Chemical Futures Building, Clayton Campus w/ artwork by James Angus: Built Unbuilt Unbuildable 2015*
2/ *Learning and Teaching Building, Clayton Campus*

2.2 Paving



Adapted applications

Small format cobbles, Forum landscape, CL

Standard paver/cobble mix, Matheson Library, CL

Larger square format paver, SSAF 2023 Shelter, CL

2.2.1 PRIMARY WALK PAVER
Granite (Basalt) I Dark colour I Flamed finish

Application
- Mandatory use on all Primary Walks.

Materials
- Raven Stone/Black Raven/Black Granite (Code: G684) - sample to be approved by Monash University Buildings and Property Strategic Design team.
- Dark grout to match (Anthracite #114).

Installation
- All Primary Walks to be minimum 6m Clear Zone (refer opposite diagram).
- Foundation slab to be designed in accordance with Australian Standards and to consider likely load types eg. fire trucks, garbage, high access equipment, deliveries etc.
- Ensure truck turning and wheel 'churn' is accounted for in structural design of paving.
- Selection of pavers to match existing on campus. Mix batches to ensure equal variance.
- Apply a single header course to both sides of the Walk, parallel to the path of travel.
- Default: Pedestrian and vehicular areas use 245mm x 495 x 60mm paver with 170mm thick reinforced concrete base, subject to engineer's approval. 5mm grout.
- Pavers to be laid 'Stretcher Bond' with long sides perpendicular to the path of travel. Refer primary walk composition next page.
- Pedestrian only areas use 245mm x 495mm x 50mm paver with 100mm thick reinforced concrete base, to engineer's specification. 5mm grout.
- Ensure new works within or adjacent to an already established section of Walk are matched and sufficiently approved on-site.
- Consider inclusion of swales or similar WSUD treatment in place of spoon drains.

Maintenance
- Replace damaged pavers with pavers to match. Samples to be provided to Monash University Buildings and Property Strategic Design team prior to install and check on site for consistency.
- Do not patch with cement. Ensure minimum curing time allowed for.
- No sealant required. Ensure pavers are polished to a slip rating of R10 and comply with DDA Standards.

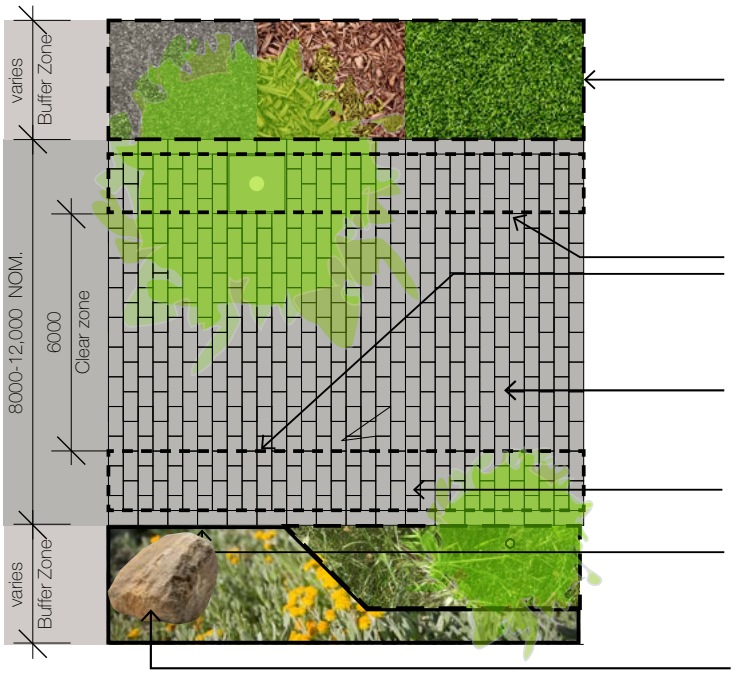
** Contact B+P for supplier suggestions.*

Default Paver dimensions at 2:1 ratio

245 x 495 x 50/60mm paving units pending load requirements. Additional 5mm grout to total 250 x 500mm installed appearance.

2.2 Paving

2.2.1 PRIMARY WALK PAVER
Granite (Basalt) I Dark olour I Flamed finish



Buffer Zone: Choice of materials at building interfaces and thresholds is at the designer's discretion. Any custom and bespoke paving is required to complement the Standard Palette. Variations from the Standard Palette require prior approval.

Furniture & Signature Tree Zone: sits outside 6m Clear Zone required for all Primary Walks. For tree species refer DDC-L, Part 3 - Planting Approach. Use standard permeable paver or tree grate to cover pit.

Clear Zone: Minimum 6m width with appropriate load capacity for emergency and service vehicle access.

Granite pavers laid 'Stretcher Bond' with granite header course to edges.

Building Edge: Building edge may abut paving or Buffer Zone. Landscape design to support activation of building interfaces.

Corners: consider the selection of species / fixed design elements to minimise pedestrians or vehicles 'cutting corners', e.g. boulders, fixed furniture etc.

Pit Lids: ideally consolidated and with minimal impact to areas of high visibility on campus. Pit lids are to match and align with the adjacent paving, where possible.

Crossovers: where crossovers on Primary Walks are necessary, ensure they are designed to be fit for purpose by considering:

- Engineering to support service vehicle weights, tyre turning and heavier use than standard pedestrianised areas.
- Paver thickness and format may need to be adjusted to support different use.
- Where pavers are deemed unsuitable in these areas by an engineer, consider seeking an alternative material appropriate to the site's immediate surrounds and is applied in a visually recessive/appealing manner.

2.2.2 PAVER PROTECTION

Temporary Construction Access

- Existing Primary Walks and turf areas are to have adequate protection installed by the contractor to prevent damage during construction/events to paved areas.
- Please note that any damage that does occur during works/events is expected to be made good by responsible party.
- Top dressing of lawns to be done where turf is damaged under mats.

** Contact SD team for supplier suggestions.*

2.2 Paving

Paver dimensions at 2:1 ratio. 1000x2000mm units.

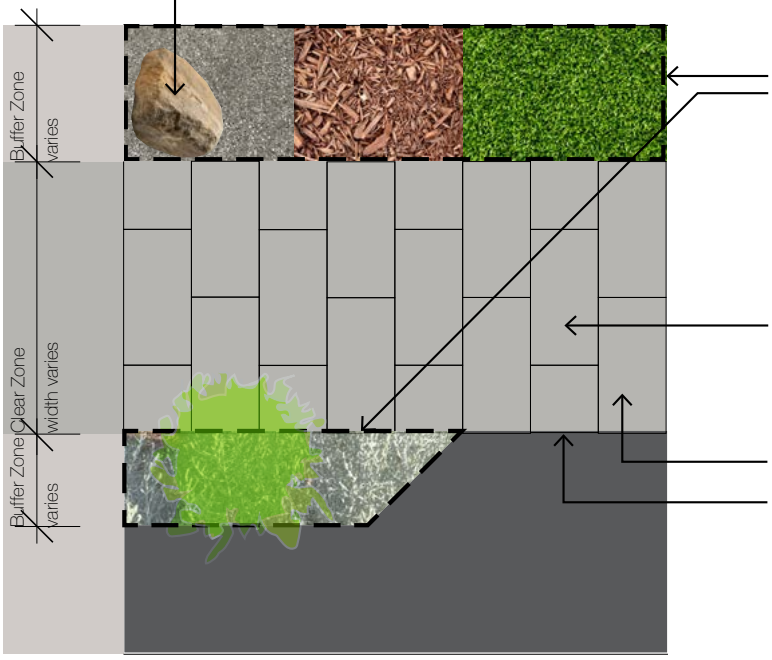
2.2.3 SECONDARY PATH PAVING
Saw cut concrete I Bluestone colour I Light sandblast finish

Application
- Mandatory use on all Secondary Paths.

Materials
- Standard Grey 32 Mpa concrete with Standard 14mm aggregate.
- 'Bluestone' colour integrally applied. Use 'Bluestone' pigment by CSS at a dose rate of 6%, or similar approved product.

Installation
- To be constructed in accordance with Australian Standards.
- In-situ application.
- Concrete to have 'Stretcher Bond' saw cuts with long sides perpendicular to the path of travel to replicate 1000mm x 2000mm pavers. No header course.
- Saw cutting and concrete composition to be sufficient to prevent cracking at junctions.
- Light sandblast finish to match appearance of Bluestone paving.
- Set out saw cutting from the centre to ensure symmetry.
- Concrete thickness to be determined by engineer and subject to likely loading.
- No sealant required, as pavers are sandblast finished to a slip rating of R10.

Additional Notes:
- Use locally sourced products and low carbon concrete where possible.
- Use recycled content with up to 20% supplementary materials to reduce resource consumption, divert waste materials from landfill and reduce quarrying and green house gas emissions associated with transport and manufacture.
- Replace 20% to 25% of Portland cement in concrete with fly ash.



Corners: consider the selection of species / fixed design elements to minimise pedestrians or vehicles 'cutting corners', e.g. boulders, fixed furniture etc.

Buffer Zone: Choice of materials at building interfaces and thresholds is at the designer's discretion. Any custom and bespoke paving is required to complement the Standard Palette. Variations from the Standard Palette require prior approval from Monash University Buildings and Property Strategic Design team. Furniture and Planting sit outside the Clear Zone, and within the Buffer Zone.

Clear Zone: Width varies depending on access requirements, including for essential services and building maintenance.

Bluestone coloured concrete, saw cut 'Stretcher Bond'.

Building Edge: Building edge may abut paving or buffer zone. Landscape design to support activation of building interfaces.

Pit Lids: ideally consolidated and with minimal impact to areas of high visibility on campus. Pit lids are to match and align with the adjacent paving, where possible.

2.2 Paving

2.2.4 EXPOSED AGGREGATE CONCRETE PAVING - DARK
Standard paving I Dark colour I Water wash finish

Application
- Tertiary walks or plaza/courtyards in bespoke areas.
- Do not apply in close proximity to light coloured exposed aggregate.

Materials
- 32 Mpa concrete Half Black (3% mix with 10/7mm 'Coleraine' aggregate (Special Grey Granite Blend from Tynong).
- Please provide samples to Monash University Buildings and Property Strategic Design team for approval prior to installation.

Installation
- Light duty applications use 100mm thick reinforced concrete, subject to engineer's approvals.
- Heavy duty applications use 170mm thick reinforced concrete, subject to engineer's approvals.
- Finish: Water wash finish to lightly expose aggregate.
- No sealant required.
- Joints: All control joints to be nom. 3mm wide saw-cut joints with an approx. depth of 50mm.
- Pit lids are to be ideally consolidated with minimal impact to areas of high visibility on campus. Pit lids are to match and align with the adjacent paving, where possible.

Additional Notes:
- Use locally sourced products and low carbon concrete where possible.
- Use recycled content with up to 20% supplementary materials to reduce resource consumption, divert waste materials from landfill and reduce quarrying and green house gas emissions associated with transport and manufacture.
- Replace 20% to 25% of Portland cement in concrete with fly ash.

** Contact SD team for supplier suggestions.*

2.2.5 EXPOSED AGGREGATE CONCRETE PAVING - LIGHT
Standard paving I Light colour I Water wash finish

Application
- Tertiary paths and other non-standard outdoor gathering areas.
- Do not apply in close proximity to dark exposed aggregate concrete.
- Please provide samples to Monash University Buildings and Property Strategic Design team for approval prior to installation.

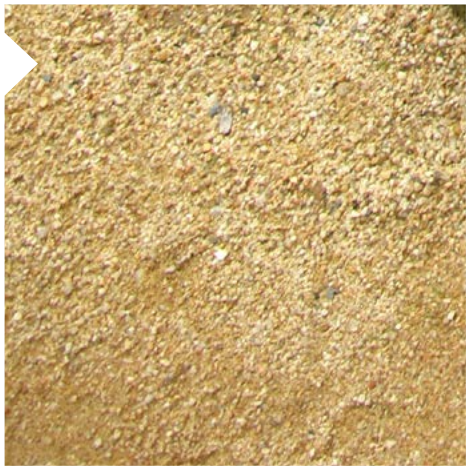
Materials
- 32 Mpa concrete with 10/7mm Third 5%. Sample to be provided prior to installation.

Installation
- Light duty applications use 100mm thick reinforced concrete, subject to engineer's approvals.
- Heavy duty applications use 170mm thick reinforced concrete, subject to engineer's approvals.
- Finish: Water wash finish to lightly expose aggregate.
- Joints: All control joints to be nom. 3mm wide saw-cut joints with a minimum depth of 50mm.
- No sealant required.
- Pit lids are to be ideally consolidated with minimal impact to areas of high visibility on campus. Pit lids are to match and align with the adjacent paving, where possible.

Additional Notes:
- Use locally sourced products and low carbon concrete where possible.
- Use recycled content with up to 20% supplementary materials to reduce resource consumption, divert waste materials from landfill and reduce quarrying and green house gas emissions associated with transport and manufacture.
- Replace 20% to 25% of Portland cement in concrete with fly ash.

** Contact SD team for supplier suggestions.*

2.2 Paving



2.2.6 GRAVEL PAVEMENT
Light colour I Granitic Sand, Dromana or Tootonie Toppings

Application
- To be used as alternative to in situ concrete paving in less formal more gardenesque/natural environments.
- Along less frequented pedestrian paths.
- Use not permitted on sloped areas prone to erosion. For use on flat surfaces only.

Materials
- 10-14mm cement stabilised gravel toppings.
- Fine crushed rock sub base.
- Timber/steel edging with natural finish and pegs where required.

Installation
- Compact sub base and install fine crush rock base as per engineer's specification. Provide 75mm depth compacted gravel toppings with cement stabiliser.
- Pavements are to be engineered to ensure they are load bearing and capable of taking anticipated vehicular loads.
- Ensure drainage is considered to minimise scouring.

HydroSTON Permeable paver

Turfstone pavers

2.2.7 PERMEABLE PAVER
No-fines concrete or land stabilisation pavers

Application
- Around tree root zones which need to be covered but open to water ingress.
- Extensive hardstand areas where maximising water infiltration is required.
- Car Parks to reduce surface water run off and erosion.
- For maximum urban cooling impact, use in conjunction canopy cover over permeable paving.

Materials
- Pedestrian only areas to use pedestrian grade pavers.
- Vehicular only areas to use vehicular grade pavers.
- Base course of crushed aggregate, and sub base to manufacturer's specification.

** Contact SD team for supplier suggestions.*

2.2 Paving

2.2.8 NO FINES CONCRETE

Application
- For use in carparks, parking bays, around tree root zones or wherever necessary to minimise runoff and reduce the risk of flooding in heavy rain events.

Materials
- Lower Carbon no-fines concrete.

Installation
- As per manufacturer's specification.
- Reinforcing to be designed by structural engineer where specified in high traffic heavy load areas.
- To be installed in accordance with Australian Standard.

Additional Notes:
- Use recycled content with up to 20% supplementary materials to reduce resource consumption, divert waste materials from landfill and reduce quarrying and green house gas emissions associated with transport and manufacture.
- Replace 20% to 25% of Portland cement in concrete with fly ash.

** Contact SD team for supplier suggestions.*

2.3 Synthetic Flooring

2.3.1 GRANULAR RECYCLED RUBBER FLOORING

Application
- To be used in sporting areas where soft fall cushioning is required by athletes/users.

Materials
- EPDM Rubber or similar.
- Colours to match in with adjacent rubber surfaces - colour samples to be approved before procurement or installation.
- Concrete edging or similar recommended adjacent for a cleaner finish.
- Colour samples to be requested prior to installation.

Installation
- To be installed as per manufacturer's specifications.
- Substructure to structural engineer's specification depending on intended loads (vehicular/pedestrian etc.).
- Dry weather/summer installation recommended.
- Where patterns are used, ensure installation methodology tested prior.
- Ensure all loose erratic granules are removed fro site after installation.
- Adhesive colour to be confirmed prior to installation.

** Contact SD team for supplier suggestions.*

2.3.2 RUBBER MAT FLOORING
Interlocking rubber tiles

Application
- Outdoor exercise stations where soft-fall finishes are required.
- Preferred product for these areas due to ease of tile replacement in the event of failure.

Installation
- As per manufacturer's specification.
- Use edging along perimeter where appropriate. Where used adjacent to grass, ensure turf is top dressed hard up against rubber for seamless finish and transition.
- Mat thickness and sub base to be designed in accordance with Australian Standard.
- Random pattern/layout recommended for easy and inconspicuous tile replacement.

** Contact SD team for supplier suggestions.*

2.4 Decking

2.4.1 TIMBER DECKING
Grey Ironbark, Spotted Gum or Blackbutt

Application
- Bespoke locations, elevated walkways, suspended surfaces above tree root zones.
- As a design alternative to stone/ concrete.
- Not to be applied in:
  + high traffic areas.
  + areas earmarked for vehicular movement.
  + building entrances or locations with low solar access.
  + on sloped surfaces.

Materials
- Grey Ironbark (Euc. paniculata).
- Blackbutt (Euc. pilularis).
- Spotted Gum (Cor. Maculata).
- Minimum wet slip rating: P4 or R11.

Installation
- Substructure: steel/aluminium as per structural engineer's design to accommodate anticipated loads. Timber substructures not permitted.
- Sealing: Intergrain UltraDeck Timber Stain or equivalent. All sides and edges must be sealed prior to installation.
- Fixings: Stainless steel, installed flush or concealed.
- Ensure adequate gap between timber decking elements for expansion/contraction in accordance with Australian Standards.
- Adequate drainage mandatory.

Maintenance
- Undertake sanding, sealing and reactive replacement of damaged boards/fixings to ensure longevity.
- All decking to be recorded in Konect by incumbent ground maintenance contractor, condition rated and maintained accordingly.

Additional Notes:
- Timber must be Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) Australia certified, to ensure timber comes from appropriately managed sources that protect forest biodiversity, productivity and ecological processes.
- All timber to be independently rated E0 for formaldehyde.
- Ensure new works within or adjacent established section of decking are matched and approved on-site.

Fibre Reinforced Plastic

2.4.2 FIBRE REINFORCED PLASTIC (FRP)

Application
- Bespoke locations, elevated walkways, suspended surfaces above tree root zones.
- As a design alternative to stone/ concrete.
- Not to be applied in:
  + high traffic areas.
  + areas earmarked for vehicular movement.
  + building entrances or locations with low solar access.
  + on sloped surfaces.

Materials
- Fibre Reinforced Plastic.
- Heelguard safe aperture size.
- Minimum slip rating: P5/R11.

Installation
- Substructure: steel/aluminium as per structural engineer's design to accommodate anticipated loads. Timber substructures not permitted.
- Installation as per manufacturer's specifications.
- Steel edge strips recommended where FRP straddles other floor finishes for seamless finish.
- Spacing between panels to be agreed upon prior to installation.
- Sample to be acquired prior to installation.
- Adequate drainage mandatory.

** Contact SD team for supplier suggestions.*

2.4 Decking

Futurewood Clever Deck, Riverstone Grey

2.4.3 COMPOSITE DECKING

Application

- Bespoke locations, elevated walkways, suspended surfaces above tree root zones.
- As a design alternative to stone/ concrete.
- Not to be applied in:
  - + high traffic areas.
  - + areas earmarked for vehicular movement.
  - + building entrances or locations with low solar access.
  - + on sloped surfaces.

Materials

- Solid composite timber decking boards.
- Minimum slip rating: P5/R11.
- BAL-29 rated.
- Concealed fixings preferred

Installation

- Substructure: steel/aluminium as per structural engineer's design to accommodate anticipated loads. Timber substructures not permitted.
- Installation as per manufacturer's specifications.
- Breaker board locations to be designed and agreed upon prior to installation.
- Subsurface drainage mandatory.
- Sample to be acquired prior to installation.

** Contact SD team for supplier suggestions.*

Stainless steel decking

2.4.4 GALVANISED STEEL MESH DECKING
Galvanised Steel Mesh Grating

Application

- Bespoke locations, elevated walkways, suspended surfaces above tree root zones.
- As a design alternative to stone/ concrete.
- Not to be applied in:
  - + high traffic areas.
  - + areas earmarked for vehicular movement.
  - + building entrances or locations with low solar access.
  - + on sloped surfaces.

Materials

- Galvanised Steel Mesh Grating.
- Heelguard safe apeture size.
- Minimum slip rating: P5/R11.

Installation

- Substructure: steel/aluminium as per structural engineer's design to accommodate anticipated loads. Timber substructures not permitted.
- Installation as per manufacturer's specifications.
- Adequate drainage mandatory.
- Sample to be acquired prior to installation.

** Contact SD team for supplier suggestions.*

2.5 Tree Protection

Standard stainless steel tree grate

Bespoke corten steel tree grate

2.5.1 STANDARD TREE GRATE
Steel I Galvanised and corten finish

Application
- Standard and Custom Spaces to protect establishing trees in heavily trafficked areas.

Materials
- Grate: Galvanised mild steel - CSA tree grate TG1083 or similar approved product.

Installation
- To concrete pavement: Fix grate flush to surrounding pavement as per manufacturer's recommendations
- Tree protection collars/guards to be used where appropriate e.g. areas with high vehicular and pedestrian traffic
- Tree grates to allow for means to inspect base of tree and tree health.

Additional notes:
- Ensure tree grates are cut and sized to fit growing tree trunks over time

** Contact SD team for supplier suggestions.*

2.6 Drainage

2.6.1 STRIP GRATE DRAINAGE INLETS
Marine grade stainless steel

Application
- Low points and bottoms of slopes.
- Where landscape hardstand straddles.
- At grade Pedestrian Crossings.

Materials
- 316 stainless steel composition (marine grade stainless steel).
- Stainless steel heel safe compliant grate.
- Minimum slip rating: P5.

Installation
- To be in accordance with manufacturer's and engineer's requirements.
- Ensure grate channel and grate design form vehicular loads if used in high traffic vehicular areas.

** Contact SD team for supplier suggestions.*

WSUD planter designed for passive irrigation, water ingress

Kerb inlets off of vehicular areas for passive drainage

Kerbless road edges with garden beds for passive drainage

Detention basin w/ subterranean rain water tanks

2.6.2 WATER SENSITIVE URBAN DESIGN PASSIVE IRRIGATION

Application
- Application to be assessed on case by case basis, but WSUD should be applied as standard approach to runoff management.
- Garden beds adjacent to extensive hardstand to enable passive runoff management .
- Adjacent to roads to minimise runoff passing into storm water drains.
- Where passive garden bed irrigation is required.
- Consider inclusion of swales in place of spoon drains.
- Consider use of phytoremediation bio-filters to assist in road runoff management.
- Rainwater harvesting tanks should ideally be integrated into all new projects. Tanks to be discreetly placed in BoH or underground, budget permitting. Where retrofitted to existing buildings, at grade tank finish and placement to be thoughtfully considered to reference architecture or be as discreet as possible.

Installation
- Ensure application considers functional use requirements of activities adjacent to proposed WSUD garden bed, i.e. use broken kerbs where vehicles are present .
- Ensure best practices methodologies are implemented. Look to accredited authorities such as Melbourne Water for basic engineering standards.

Additional Notes:
- Ensure inlets are regularly cleaned of sediment to inhibit clogging.
- Where bio-filtration systems are used, ensure harvesting of plant and filtration media occurs as specified by engineer and that this process is budgeted for to ensure maximum filtration functionality and is achieved.

2.7 Tactile Indicators

Stainless steel studs TGSIs w/ black insert for contrast

Stainless steel directional TGSIs

2.7.1 WARNING AND DIRECTIONAL TGSI
Stainless Steel with polymer insert (preferred) or Stainless Steel

Application
- Any non-stone based paving.
- Limited to only where required and suitably specified by a qualified access consultant.

Materials
- Discrete Composite TGSI: 35mm dia. x 4.5mm high approx; 316 marine grade solid stainless steel surround - smooth finish, heavy duty coloured polymer centre and stem.

Installation
- To be in accordance with Australian Standards and DDA requirements.
- To be in accordance with manufacturer's requirements.
- Where contrast requirements can only be met by all stainless steel TGSIs, the type shown may be used.
- All TGSIs to use stainless steel fixing plugs.
- Confirm substrate and underside.
- Mechanical fixings preferred unless otherwise agreed.

** Contact SD team for supplier suggestions.*

Stone on stone TGSIs

Stone on stone directional TGSIs

High contrast stone on stone stair nosing

2.7.2 WARNING AND DIRECTIONAL TGSI - STONE
Stone I Natural granite

Application
- Any stone based paving.
- Limited to only where required and suitably specified by a qualified access consultant.

Materials
- Natural stone on stone of varying luminance contrast depending on context of installation.
- Minimum slip rating: P5.

Installation
- To be in accordance with Australian Standards and DDA requirements.
- To be in accordance with manufacturer's requirements.
- All TGSIs to use stainless steel fixing plugs.
- Confirm substrate and underside conditions allow for installation.
- Confirm slip resistance rating and luminous reflectance values comply with current standards.

** Contact SD team for supplier suggestions.*

2.8 Fences

2.8.1 SERVICES SCREEN
Timber and Galvanised Steel

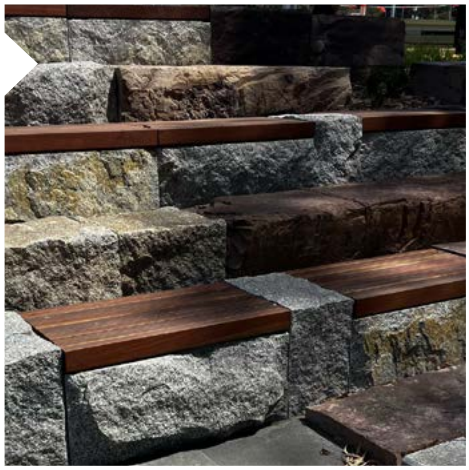
Application
- Standard and Custom Spaces to screen views to services areas and external plant.

Materials
- Galvanised Steel frame and capping.
- FSC certified Spotted Gum (Corymbia maculata) or
- FSC certified Grey Ironbark (Eucalyptus paniculata).

Installation
- Use timber battens 50mm wide by 70mm deep.
- Construct steel frame as per structural engineer's design.
- Locate fixing of battens to galvanised steel frame behind public face.
- Galvanised steel capping to fence top and bottom.
- Sealing: Intergrain UltraDeck Timber Stain or equivalent. Clear finish preferred. All sides and edges must be sealed prior to installation.
- Silvering of timber permitted if natural finish is sought (applicable to vertical members only).

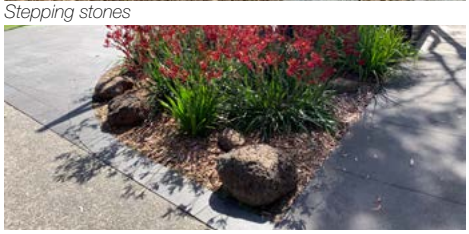
Additional Notes:
- Timber must be Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) Australia certified, to ensure timber comes from appropriately managed sources that protect forest biodiversity, productivity and ecological processes.
- All timber and timber products are to be independently rated E0 for formaldehyde.

2.9 Stone



Formal boulder seating

Stepping stones



Boulder corner blocks

Informal stone steps/bleachers

Landscape boulders

2.9.1 BOULDERS
Stone I Natural mudstone/granite/bluestone

Application

- Stone boulders can be used on campus in various ways:
  - + corner blocks to stop vehicles and pedestrians cutting corners and damaging the landscape.
  - + retaining structures on slopes.
  - + informal seating opportunities.
  - + as informal steps.
  - + as retaining structures.
  - + seating, formal and informal.
  - + and as HVM mechanisms.
  - + landscape objects to break up planting and add visual interest.
  - + stepping stones in bespoke locations.

Materials

- Locally sourced rock in various sizes.
- Type of stone used should be selected on the basis of intended use and longevity. Hard-wearing stone should be selected in high-traffic areas.

Installation

- Rocks are to be buried approximately one third below adjacent ground level to prevent any possible movement.
- Ensure rocks are suitably placed so that there are no crevices, sharp edges or protrusions and that there are no entrapment spaces for hands or feet.
- Place rocks to not damage adjacent hard surfaces.
- To avoid finger entrapment, crushed stone mixed with mortar to colour match stone can be used where necessary to infill gaps.
- To be oriented in as natural looking a fashion as possible for a seamless blend into the landscape.
- Where used as seating or of significant size, seek input from a structural engineer for foundation design.

2.10 Retaining Walls and Edges

Stone and wire mesh gabion walls

Timber and galvanised steel retaining walls

2.10.1 RETAINING WALL
Stone and Steel Mesh Gabions | Timber and Steel

Application

- To protect and prevent erosion of garden beds, where appropriate.

Materials

- Timber and steel:
  - + FSC certified Spotted Gum, Grey Iron Bark or Blackbutt.
  - + Heavy duty galv. steel I beam/ joiner posts between horizontal sleepers.
  - + Galv. steel screws, bolts and fixings.
- Steel and stone gabions:
  - + galvanised steel with stone infill.

  Ensure stone straddling cage is neatly packed for clean finish.

Installation

- Retaining walls over 1m must be designed and constructed in accordance with a qualified Structural Engineer's specification.
- All weepholes to be waterproofed to stop water penetrating into timber.
- Weepholes not to be visible from front face.

Black powder coated steel edging

Corten steel edging

Galvanised steel edging

2.10.2 GARDEN BED EDGING
Powder Coated/Galzanised/Corten Steel

Application

- For use around garden beds to:
  - + add extra level of finish.
  - + retain soil and mulch.
  - + mitigate vehicles/pedestrians cutting corners.
  - + retain tree root balls where levels change directly adjacent.
- Use of aluminium edging not permissible.

Materials

- 3 - 10mm powder coated edging, thickness to be determined by application.
- Edging colour to match surrounding landscape palette for consistency.

Installation

- To be installed flush up against paths.
- All supporting pegs to be made of steel and are to be concealed.

Additional Notes:

- Ensure mulch/soil level goes a minimum of halfway up back of edging.
- Whipper-snippers not to be used hard up against edging with powder coated finish.
- Basic timber edging permissible around low profile garden beds for utilitarian use between garden beds and turf/granitic sand etc.

2.11 Garden Bed Barriers

2.11.1 TEMPORARY LAWN PROTECTION

Application
- For temporary use where existing or new landscapes require protection from pedestrian traffic during establishment/recovery after events.

Materials
- Galvanised Steel Turf Post with Pigtail Top.650 mm high, 8mm steel rod.
- White coloured rope.

Installation
- Turf spike to be positioned via foot pressure.
- White rope to be used where safety risk is low.

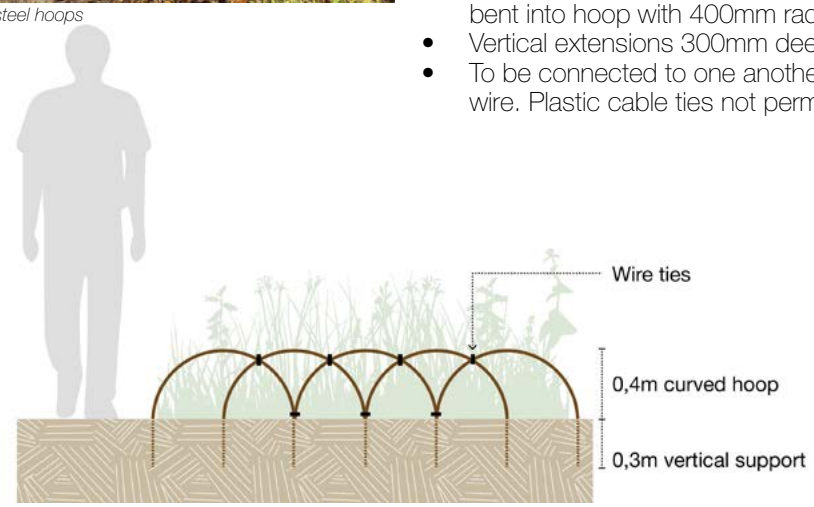
Corten steel hoops

2.11.2 SEMI PERMANENT GARDEN BED HOOPS

Application
- Around new garden beds during establishment periods.
- In areas where goat tracks are forming through the landscape.
- Where vehicles are clipping corners.
- Around vulnerable trees to create permanent exclusion zone.

Materials
- 10mm gauge weathered steel rebar, bent into hoop with 400mm radius.
- Vertical extensions 300mm deep.
- To be connected to one another with wire. Plastic cable ties not permitted.

Installation
- Entire straight vertical section to be completely buried as shown below, only curve to be exposed above ground.
- To be removed once plants have sufficiently established/recovered, (6-12 months).



2.12 Shelters

Clayton 2023 SSAF shelter

Roof and planting integration

Appropriated standard granite paver - square format

2.12.1 OUTDOOR SHELTER KIT OF PARTS

Application

- In areas where covered weather-proof outdoor sheltered spaces are required.
- To facilitate needs for outdoor dining, working and social gathering.

Materials

- 2023 SSAF shelters at Clayton and Caulfield to be used as benchmark for basic principles regarding:
  - material selection.
  - layout logic.
  - surface treatment.
  - circulation and siting of structure.
  - integration with landscape.
  - amenity provision.
  - OHS/ DDA/ CPTED approach.

2.13 Landscape Timber

Habitat log embedded in landscape

Informal seating element

Log retaining structure

Informal log garden bed edging

2.13.1 RE-PURPOSED LOG

Application

- Trees felled on campus of significant girth to be re-purposed on campus in various ways.
- Depending on thickness, re-purposed as:
  - + habitat logs to promote biodiversity.
  - + informal (temporary) seating elements in suitable informal locations.
  - + retaining structures on slopes.
  - + as barriers to minimise goat tracks forming through garden beds.
  - + small branches and other tree detritus should be mulched and stockpiled for re-use in campus garden beds.

Installation

- To be used horizontally only.
- Orientation to be determined on site depending on purpose and location of placement and character of log.
- If used as seat, plane and sand top for user comfort and to mitigate snagging.

2.13.2 MULCH

Application

- Apply annually to all garden beds to minimise weed growth and maximise moisture retention.

Materials

- Arborist Mulch or 'Euky' Mulch.
- Minimum 70% wood chip content.
- Leaf litter or saw dust is not appropriate.
- Dyed mulch not permitted.
- All mulch to be certified asbestos-free.
- Bush mulch generated by ground team during maintenance and tree work permissible for use in less visible, lower traffic areas as part of circular economy initiative.

2.14 Vehicular Infrastructure

2.14.1 SPEED BUMPS

Application
- Carpark carriageways. Speed bumps should be strategically located to reduce vehicle speed, creating a safe environment. Locations should not negatively impact cyclist or pedestrian circulation.

Materials
- Bolt-down speed bump, allowing easy removal if required.
- Black and yellow colours preferred.
- Speed bumps should have gentle edges to protect cars.
- Materials as per manufacturer's specification and Australian Standards.

Installation
- As per manufacturer's specification.
- In accordance with Australian Standards.

2.14.2 WHEEL STOPS

Application
- Parking bays abutting footpaths, kerbless garden beds and slopes.

Materials
- Concrete Wheel Stops.
- Height: 90 and 100mm.
- Length: of 1650.
- Y20 dowels or Galvanised bolts 300mm long to be used to fix wheel stops to carpark surface and chemset in place.

Installation
- As per manufacturer's specification.
- In accordance with Australian Standard.

Part 3 - Planting Palette

3.1 Overview

Planting needs to perform well functionally, sustainably, aesthetically and contribute to campus biodiversity: aesthetically by establishing a strong legible sense of character; sustainably by passively cooling to mitigate ever increasing urban heat island effect; biodiversity by creating refuge for threatened species; and in terms of functionality by creating spaces people want to inhabit and feel connected to. Monash is committed to seeing its landscapes develop as unique site-responsive spaces with deep connections to the land our campuses are located on.

PURPOSE

The purpose of the palette is to enhance landscape character, biodiversity and user experience:

- Provide DDC-L users with a clear sense of the University's desired landscape outcomes with regards to biodiversity, maintenance, sustainability, place making, water management and aesthetics.
- Establish clear links between consultant output and Monash University's *Nature+* and *Understanding Country* documents to ensure objectives outlined within those respective documents are reflected in proposed landscape designs / projects.
- Promote holistic approaches to planting, landscape curation and outdoor public realm design.

IMAGES (clockwise from top left):
1/ *Flowering Meadow and Chancellery building, CL*
2/ *Secluded seating spots, Chancellery, CL*
3/ *Peter Cripps, Public Projects Mirror Orator artwork embedded in landscape, CL*

CORE DIRECTIONS

Further proliferate our distinctly Australian landscape character and ecology:

- Australian native plants:
  Plants from across Australia and its associated islands. To dominate plantings throughout the campuses and particularly in central areas. The default species where it is unclear which type of planting applies.
- Endemic plants:
  Plants specific to the local Ecological Vegetation Class (EVC) that would have been on or near the campus prior to colonial settlement. If this strategy is employed, consider appropriateness in conjunction with microclimate, water, soil systems.
- Exotic plants:
  Plants from other (non Australian) parts of the world. Exotic vegetation can only be used in select bespoke environments and in designated locations. Approval from Monash University Buildings and Property Strategic Design team required.

DESIGN PRINCIPLES

Design Principles that underpin the palette are:

- Employ an Australian native palette, prioritising ecology and biodiversity.
- Create individual character for spaces with nuanced context-responsive planting approaches.
- Maximise canopy cover through successional tree planting and increasing density: more trees!
- Use low maintenance, high impact, robust, climate adaptive species.
- Create landscapes which connect strongly with place and by extension Country through species selection and management practice.
- Use landscape as test-and-learn opportunities employing species which further research/education.
- Employ green roofs and walls where practicable and high impact.
- Increase safety through visibility with sight-lines through vegetation.
- Imbue spaces with narratives to connect them to place, adjacencies.

3.2 Landscape Classification

CONTEXT

Monash's campuses are diverse in landscape character, from the remnant Indigenous landscape tracts of the Jock Marshall Reserve to native bush garden settings, more contemporary urban landscapes, taxonomic systems gardens and medicinal indigenous collections. Current plant species palettes are predominantly native/indigenous, helping establish a distinctive Australian identity unique to Monash. The Australian native planting character demonstrates a concerted effort to connect with place and a connection with Country. This document should be read in conjunction with Monash University's *Understanding Country* document to strengthen intent and ensure planting outcomes are thoughtful and informed.

OBJECTIVE

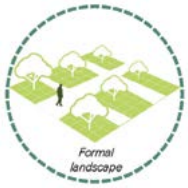
The landscape vision for the outdoor public realm of Monash campuses celebrates current eclecticism whilst focusing on user health and wellbeing through reinforcing the existing landscape character and public realm identity. As a priority, the landscape character should foster and further enhance the ecology of the campus, promoting biodiversity and habitat creation. The primary walk network should be reinforced as a series of journeys punctuated by episodic spaces that knit the campus together, creating places for congregation and collaboration and outdoor extensions of buildings and faculty environments that help build precinct identity and a sense of belonging and connection to place.

TYPOLOGIES

A spatial hierarchy for each campus has been defined in our masterplans to ensure the desired landscape character for the University is consistently developed and maintained across all Australian campuses. A series of distinct landscape planting typologies which help strengthen the existing softscape include bush, formal, informal, ecological and bespoke. The delineation and transition between planting types is to be well-defined and appropriately selected dependant on its immediate adjacencies.

**For more detailed information, please refer to respective Monash Campus Masterplans*

URBAN



FORMAL

A formal landscape is a more ornamental, formal setting for building setting and campus activity. Species are typically native and in an ordered arrangement, providing clear and open views. Species selection to focus on colour, texture, composition and habitat.

INFORMAL

Less structured arrangement focused on a representation of native and indigenous canopy trees, lower shrub and ground cover species with clear sightlines. Arrangement of trees can be relatively ordered and comprise largely of a mix of species, with species selection to focus on colour, texture, composition and habitat. Ideal for between buildings where passive surveillance is required.

BESPOKE

Contained and protected ornamental, taxonomic or ecological setting, allows for conservation, education, observation and/ or faculty-defined campus activity. Species defined by taxonomy and new use of exotic species planting on campus where they support landscape expression or are located within a defined exotic landscape character.

BUSH

Multi-layered vegetation ecosystem, predominantly indigenous low, mid storey shrub and small tree species, supplemented by native species to support biodiversity and encourage resilience. Focus on habitat and diversity of species with a range of planting arrangements from curated through to naturally successional. Sub-categories: curated indigenous, educational, social and cultural landscapes.

WILD

ECOLOGICAL

Multi-layered vegetation ecosystem, using Indigenous low, mid storey shrub and small tree species, with prominent canopy trees supplemented by native species from similar ecotones to support biodiversity and allow resilience to a greater instability and intensity of environmental conditions. These areas focus on research, learning, habitat and diversity of species.

3.3 General Guidelines

OVERVIEW

Monash is committed to seeing its landscapes develop as world class spaces and places. As educational modes continue to diversify, these environments will play an increasingly important role in attracting students to on campus learning. The ecological enhancement, habitat provision, biodiversity contribution, visual amenity, cooling and place-making attributes are key to delivering this vision. Monash University has identified the following conditions as critical to the delivery of landscapes of exceptional quality and longevity.

GROUND CONDITIONS:
SOIL AND WATER

- **Mulch** all garden beds extensively for moisture retention.
- Specify **purple pipe** irrigation in all new landscapes.
- Where permanent irrigation isn't available, temporary **soaker hoses** to be installed for 6-12 months during establishment period.
- Use **organic fertilizer** during installation to boost growth.
- Choose plants which can deal with **water logged or other difficult conditions**.
- Employ **passive irrigation/WSUD** methodologies where garden beds straddle hardstand areas swales, kerbless edges, rain gardens.
- Incorporate **performative water detention areas**, ponds etc. which create **aquatic habitat** and **phytoremediation** opportunities.
- Where bio-retention systems are used, ensure **nutrient sequestration species** are specified and harvested as an when necessary to mitigate re-release.
- Plant **shade and wind tolerant plants** in wind-swept or heavily shaded areas.
- Use **natural materials as barriers**—felled tree logs, stone, mounding.
- Consider plant and material **provenance** for sustainability.
- Consider **ground water conditions and soil types**.
- Undertake **agronomy assessment** prior to planting if necessary.

GARDEN BEDS:
MID- AND UNDER-STORY

- Use **edging** between lawn/planting in formal gardens.
- Plant according to **context, visibility, level of care** area is likely to receive.
- **Hoop/pigtail new garden beds** for 6-12 month establishment period.
- Plant for **year round visual interest**, i.e. seasonal flowering.
- Identify and **accommodate pedestrian desire lines**.
- Leave 0.5-1m strip unplanted along building facades.
- Maximise micro fauna movement through **garden bed connectivity**.
- Reference historic **EVCs** in planting where meaningful and appropriate.
- Design planting to spill over paths and create **soft vegetated edges**.
- Plant minimum 0,4m away from path edge to **prevent over trimming**
- Plant dense **noise and visual impact buffers** along busy roads.
- **Layer planting** from high planting in the middle of a garden bed or against buildings to lowest plants near edge of path/lawn/hardstand.
- In expansive areas, consider **hydroseeding** instead of tubestock.
- Use **hedging** to obscure/as fencing.
- Use **colour or species groupings** to create strong identities in spaces.
- Design for **plants to cascade down fronts of retaining walls**.
- In smaller garden beds, ensure **minimum groups of 5 plants**.
- Endeavour to **plant in between April and October** to minimise attrition.

OVER-STORY:
CANOPY COVER AND TREES

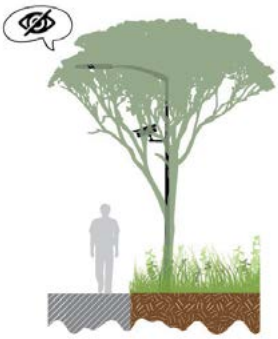
- Ensure tree species selection considers **topographical, soil, wind, climatic conditions** and shade requirements.
- Install **generous mulch rings** up to canopy drip-line around trees planted in lawns. Merge overlapped rings.
- **Repurpose all felled trees** as habitat logs, furniture, retaining structures or goat track blocks.
- Keep **tree trunks clear** from ground up to 2m to open sightlines.
- **Plant dense tree copses** where instant shade is required.
- **Mimic successional tree planting** strategies and employ basic **Miyawaki forest** planting strategies where appropriate.
- Plant **variety of species** to ensure future climatic conditions can be withstood by our urban forest. **Arboreal biodiversity** will ensure our forests are pathogen-resistent.
- Plant trees far away enough from building facades to **mitigate radiated heat and reflected wind impacts and diagonal growth**.
- Increase **tree plantings along Primary Walks** to promote **shaded pedestrian movement**.
- Ensure all tree stock is quality controlled prior to planting.
- Undertake **3D tree root mapping** if screw piles are required within SRZ.

IMAGES (clockwise from top left):
1/ *Peninsula Valley Creek Restoration, Gilles Hall, PEN*
2/ *Southern Precinct landscape, CL*
3/ *Flowering plum tree, Kenneth Hunt garden, CL*

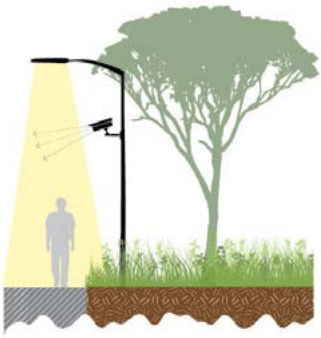
3.4 Maintenance Considerations

The following landscape design principles encompass a variety of simple yet common design decisions which have significant impact on the aesthetic, longevity, robustness and ease of maintenance required in caring for our landscapes. Employing these basic yet effective strategies will help ensure that our grounds maintenance teams are able to achieve the university's desired landscape character more easily long term. Given landscapes take many years to fully establish, reducing unnecessary attrition and minimising resource and temporal waste is key to ensuring high quality landscapes are achievable and maintainable at MU.

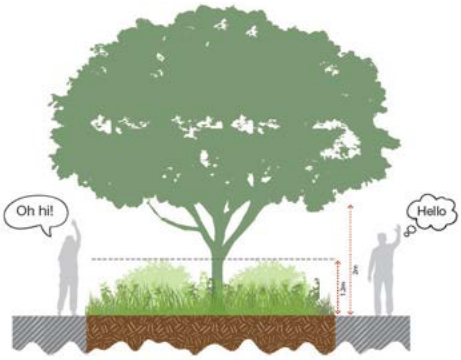
TO AVOID



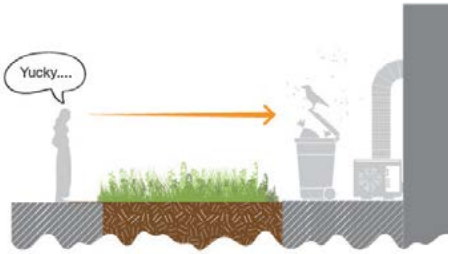
PREFERRED OUTCOME



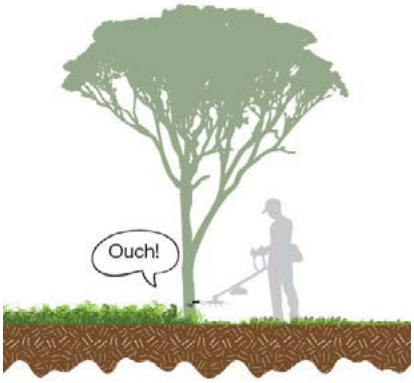
Ensure trees aren't planted too close to existing light poles and CCTV cameras. Conversely, ensure light poles are not placed too close to existing trees. Tree foliage obscures lighting and camera sightlines which compromises safety and security.



In high use zones, ensure sightlines are maintained under trees and over mid storey planting. Mid story to grow no higher than 1.2m. Tree trunk to be kept clear to 2m on mature trees (dependent on tree size and location)



Use hedging and shrubbery to disguise unsightly service and utility areas instead of employing fencing. Where fencing is required, consider growing creepers up fence to soften visual impact.

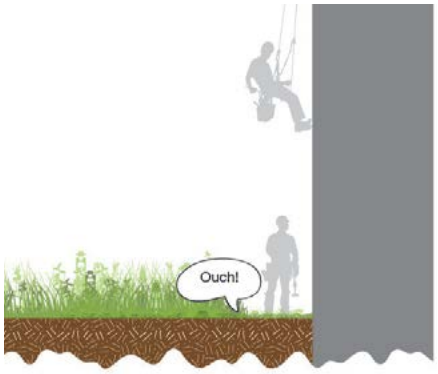


Mulch generously around trees when placed in turfed areas to ensure trunks are not damaged when grass is cut. Mulching to edge of tree drip line is ideal and preferred.

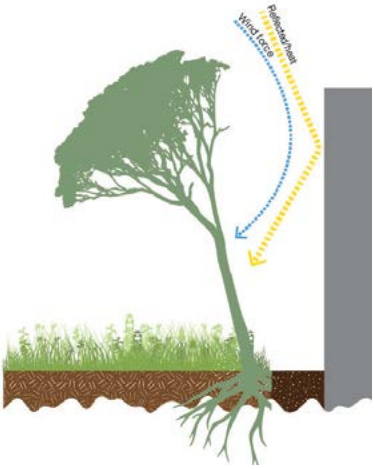
3.4 Maintenance Considerations

TO AVOID

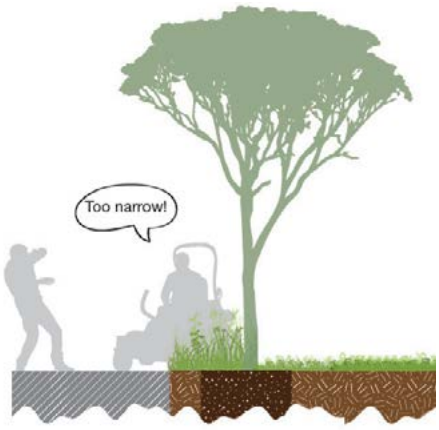
Ensure adequate space is left between new planting and paths to minimise unnecessary ongoing maintenance and unsightly hedging/ pruning as a wilder looser growth type is preferenced over clipped shrubs. Mature size of plants to be considered when designing to meet this end.



Leave 0.5 - 1m space between facades and adjacent garden beds to ensure contractors have space to maintain and clean the building without unnecessarily damaging planting. Mulch or gravel surface preferred. Granitic sand not recommend.

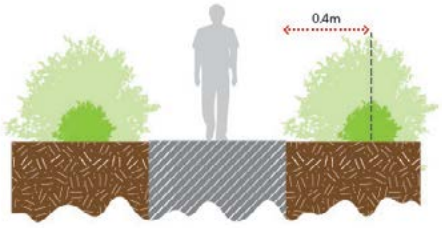


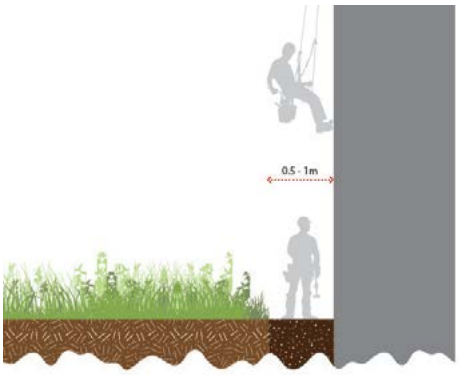
Carefully consider tree placement adjacent to buildings. Wind, one sided solar exposure, radiated heat off building facades and inadequate room for root zones all negatively affect trees too closely placed to buildings. Ensure adequate space is provided to minimise unnecessary and premature attrition.

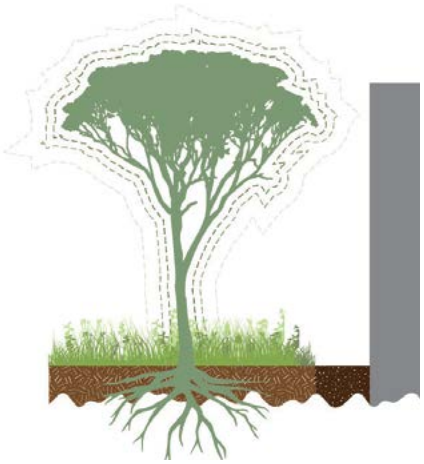


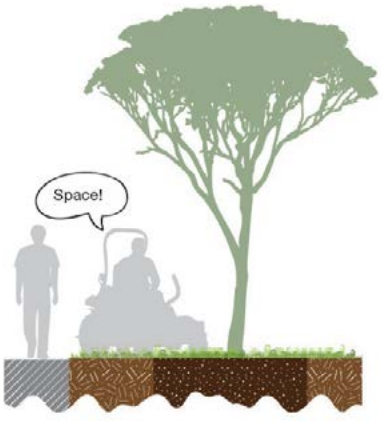
Leave minimum of 1m between trees/ objects/furniture and paths where turf is planted to allow for ride on lawn mowers to manoeuvre safely and effectively.

PREFERRED OUTCOME









3.5 Plant Selection

OVERVIEW

The following pages offer a comprehensive species lists for softscaping across all our university campuses but should not limit designers to using only those included. We encourage designers to aim for maximum biodiversity in tree and terrestrial planting selection. This lists aims to inspire and liberate users to make bold design decisions using species which are tried and tested on our campuses and which will bring biodiversity, climate resilience, pathogen resistance, help create critical habitat and create spaces users love inhabiting across our campuses, year round.

Species endemic to Melbourne and the relevant EVCs specific to the various sites upon which our campuses are located can be referenced but should be done so with nuance as numerous conditions which historically enabled those EVCs to thrive no longer exist given how highly modified the broader urban landscape is.

The palettes also aim to broaden users' frame of reference and encourage the use of species form various climatic zones across Australia. Planting a wide variety of species allows us to test-and-learn in the landscape and trial the use of trees and plants which can withstand the rapidly changing climate and the subsequent change to conditions plants are used to growing in.

Note: *To allow for accurate planting reviews during design, please ensure all planting plans are illustrated/documented to show accurate mature plant sizes and number of plants intended for space and not mixes

HOW TO USE THIS GUIDE

Plant choice should be based on:

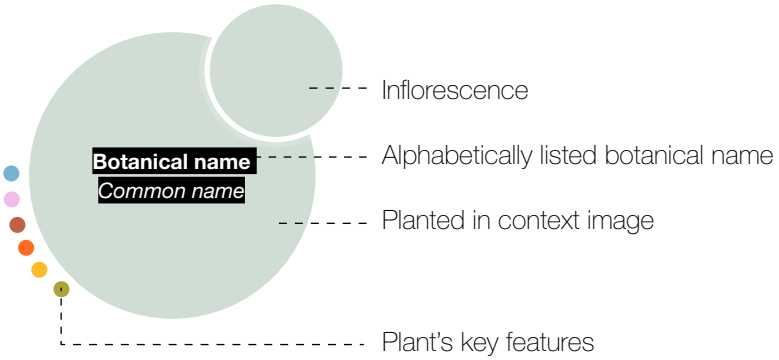
- Visual interest it may bring to a space.
- Biodiversity contribution and habitat.
- Plant's purpose (wind break vs. in-fill vs. pollinator attraction vs. buffer).
- Site conditions (climatic condition, soil type and quality, level of traffic).
- Service rating a space has applied to it: How intensive the maintenance it can expect to receive may be.
- How visible the area is (i.e. back of house vs. Primary Walk).
- Intended colour palette for overall scheme.
- Irrigation availability.
- Space available to plant.
- Desired and required shading and sunlight levels.
- In situ soil conditions as confirmed by an agronomist/geo-technical report.
- Existing tree health and ULE as confirmed by an arborist.
- Proximity to water points if unirrigated.
- Location of desire-lines .

Key features for each plant are captured in the key below and aim to assist users with making aesthetically interesting yet informed decisions depending on all the factors listed above:

Key Features:

- Fast growing
- Windbreaks (*all excl. grasses)*
- Shade tolerant (halves denote moderate tolerance)
- Medicinal / edible
- Feature flowering
- Water logged conditions
- Mass planting (*for grasses only*)

Species Palette Guide:



PROCUREMENT + INSTALLATION

For specialist projects, where planting constitutes a significant component of the design, ensure plants are sourced early on and propagated for specific projects if necessary.

** Contact B+P for nursery and supplier suggestions.*

Mandatory hold points to be observed prior to installation:

- Soil needs to be quality controlled prior to installation of topsoil top up, irrigation install, planting and mulch to ensure all builders rubble has been removed.
- All compacted soil needs to be ripped prior to planting taking place.
- Adequate drainage needs to be installed to mitigate waterlogging.
- All plant stock needs to be quality controlled by consultant to ensure plants are as expected and of equal health and stature unless otherwise agreed upon with B+P.

3.6 Species Palette: Ecological Vegetation Class (EVC)

In alignment with Monash University's ambition to plant exclusively indigenous Australian species and create more tangible 'Connections to Country' on our campuses, we encourage the use of EVC specific plants in areas where appropriate and fit for purpose with water, climatic and soil condition requirements informing plant choice.

The Gippsland Plain bioregion is located in the south east of Victoria and includes flat low lying coastal and alluvial plains with a gently undulating terrain dominated by barrier dunes and floodplains and swampy flats. The soils associated with the upper terrain typically support the Lowland Forest ecosystem. The dunes are predominantly sandy soils supporting Heathy Woodland and Damp Sands Herb-rich Woodland ecosystems. The fertile floodplains and swamps are earths and pale yellow and grey texture contrast soils and support Swamp Scrub, Plains Grassy Woodland, Plains Grassy Forest, Plains Grassland and Gilgai Wetland ecosystems. The EVCs within this bioregion which occur on our campuses include Grassy Woodlands, Grassy Forests and Swampy Riparian Complex (*Nature Kit Victoria*).

EVC 126: Swampy Riparian Complex:

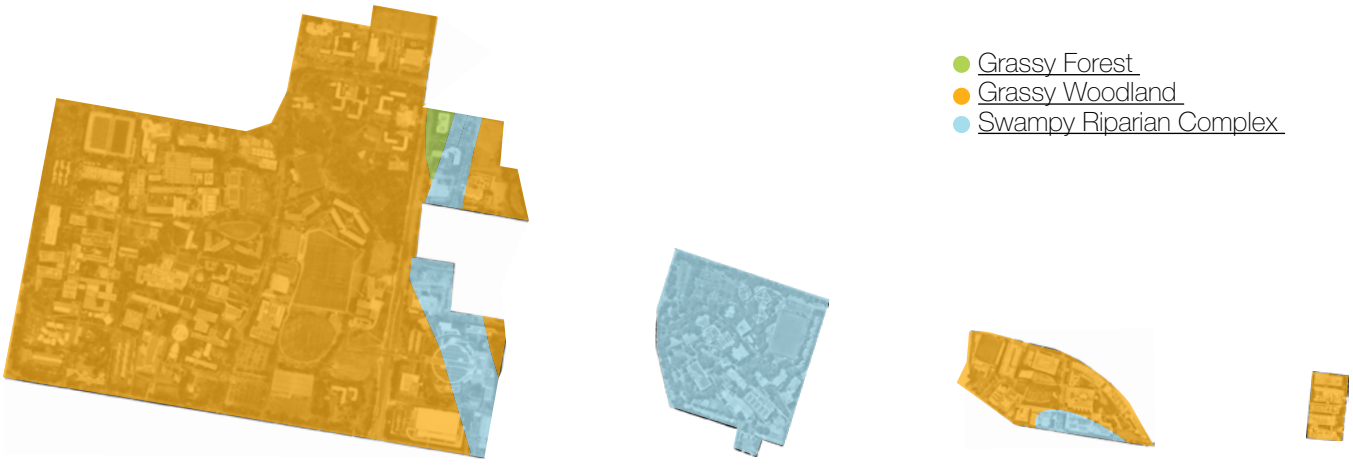
Open eucalypt woodland to 15 m tall with ground-layer dominated by tussock grasses and/or sedges and often rich in herbs. Occurs on poorly drained, seasonally waterlogged heavy soils, primarily on swamp deposits but extending to suitable substrates within some landscapes of sedimentary origin.

EVC 128: Grassy Forest:

Low growing forest to 20 m tall with an understorey of small and medium shrubs and a rich diversity of herbs. Large shrubs and understorey trees may also be conspicuous. Often grows in areas transitional between drier box stringybark forests and taller, herb-rich forests typical of more favourable environments.

EVC 175: Grassy Woodland:

Restricted to near coastal localities on secondary or tertiary dunes behind Coastal Dune Scrub. Usually dominated by a woodland overstorey of Coast Banksia Banksia integrifolia to 15 m tall over a medium shrub layer. The understorey consists of a number of herbs and sedges, including scramblers.



Clayton Peninsula Caulfield Parkville

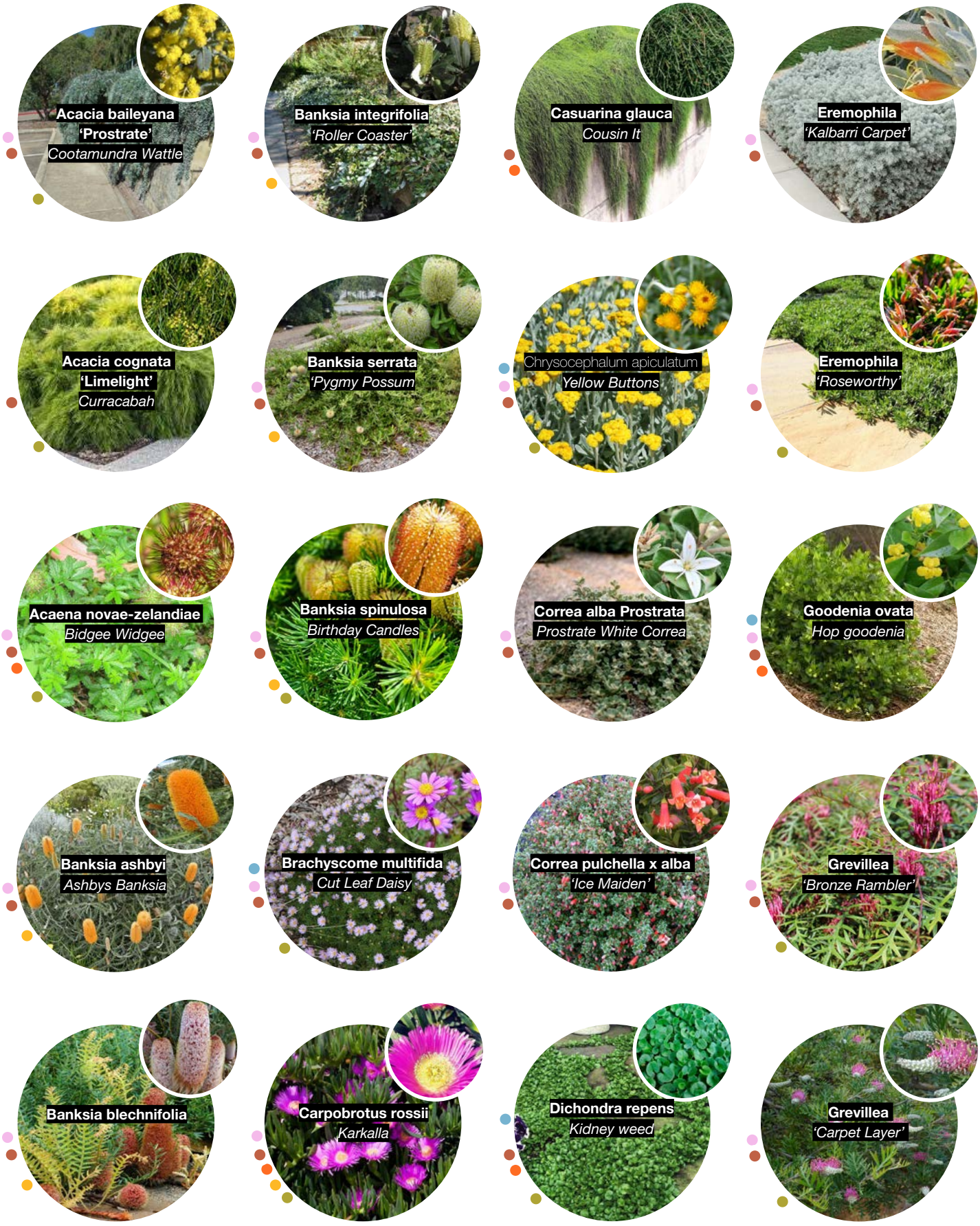
3.6 Species Palette: Creepers

Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Palms, Ferns & Tropical

Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Ground cover

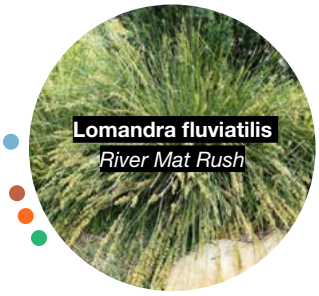


Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Ground cover

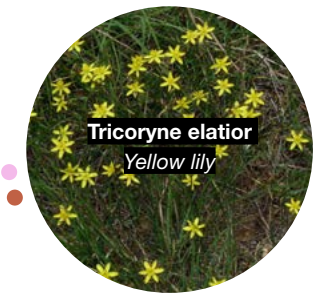
Fast growing · Windbreaks · Shade tolerant · Medicinal / edible · Feature flowering · Water logging tolerant

3.6 Species Palette: Grasses, Strappy and Tufting



Fast growing Mass planting Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Grasses, Strappy and Tufting



Fast growing Mass planting Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Midstory/Shrubs

Fast growing · Windbreaks · Shade tolerant · Medicinal / edible · Feature flowering · Water logging tolerant

3.6 Species Palette: Midstory/Shrubs

Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Trees

Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Trees

Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

3.6 Species Palette: Culturally Used Plants

Fast growing Windbreaks Shade tolerant Medicinal / edible Feature flowering Water logging tolerant

Part 4 - Furniture Palette

4.1 Overview

PURPOSE

The purpose of the palette is to ensure consistency of character and quality of materials across the campus built environment.

Objectives:

- Provide high quality furniture and landscape fixtures commensurate with a quality institution.
- Improve the visual and physical amenity of public spaces.
- Use a family of bespoke and off-the-shelf furniture items to ensure unity of experience and cohesion across and between campuses.
- Creating memorable, recognisable and strong identities for our landscapes.

PROCUREMENT

The procurement of furniture encompasses planning and time. This includes the selection of location, manufacturing and lead time.

Objectives:

- Buildings and Property approval to be obtained prior to ordering goods and proceeding with works .
- Bundle orders with other projects where possible for cost efficiencies.
- Consider provenance of products to ensure manufacturers comply with our *Impact 2030* ambitions.
- Where provided, refer to preferred suppliers as default.

DESIGN PRINCIPLES

The design principles provide the foundation for the palette and all future additions to it.

Objectives:

- Comply with our overarching direction to 'de-clutter' its landscapes.
- Monash University's sustainability initiatives to guide selection provenance, durability, circularity.
- Use of *Helvetica Neue* for all text, consistent with Monash Branding Guidelines, is mandatory unless otherwise approved.
- Co-locate furniture together, creating rationalised outcome.
- Placement of furniture not to obstruct sightlines.

APPLICATION

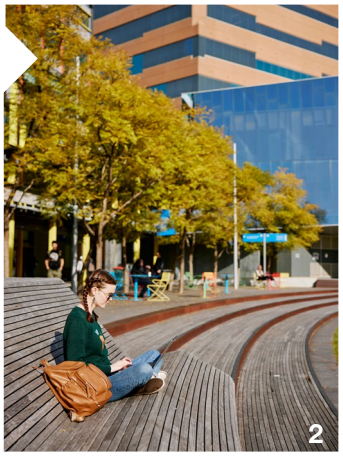
The palette establishes the suite of external public realm furniture for use in Standard, Custom and Bespoke spaces.

Custom Spaces
In these spaces the choice of materials is as per the Standard Palette, with custom finishes and forms to be determined by the designer. However, any custom finishes should take into consideration, its context within the campus and the Monash Standard Palette and must be approved by Buildings and Property Strategic Design team.

Bespoke Spaces
In these spaces the choice of materials is at the designer's discretion. Any custom or new bespoke materials should complement the Standard Palette and must be approved by Buildings and Property Strategic Design team.

Building Interfaces/Thresholds
Choice of materials at building interfaces and thresholds is at the designer's discretion. Any custom and bespoke paving should complement the Standard Palette and must be approved by Buildings and Property Strategic Design team.


1


2


3

IMAGES (clockwise from top left):
1/ *The Forum, water side seating, CL*
2/ *Bespoke seating. Campus Green, CA*
3/ *Standard seating, Living Laboratory for Water Tech, CL*

4.2 Furniture

Christie ICON Cabinet – Large in monument grey

CC2 Cooktop barbecue hood

4.2.1 BARBECUES

Application

- Strategic locations across campuses where this type of amenity and activation is desired.
- Proposed locations to be carefully vetted due to high potential for interface issues, owing to smell, noise and pavement staining.

Specifications

- Christie ICON Cabinet Large All-access barbecue.
- Colour preference: Monument grey powder coat. Diversion from this permissible only with oversight from Buildings and Property Strategic Design team if a different colour finish is sought.
- Wheelchair accessible.
- Christie's CC2 Cook top barbecue hood to be used where BBQ not undercover to minimise dirt accumulation on cook top.
- Barbecues to be affixed with protective locks.
- Garden tap/washing area to be in close proximity.
- Co-location of adequate lighting, waste bins, drinking fountain etc.
- Co-location of adequate preparation tables, min. 2 (1x raw food table, 1x cooked food table for the prevention of cross-contamination).

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

Single-sided co-located recycle and landfill bins

4.2.2 BINS

Application

- Bins are to be strategically sited across the campus, along Primary Walks and secondary pathways, adjacent to major building entrances and within key landscapes.
- Whilst they should be easy to locate and access, they should not be over specified or inappropriately sited so as to dominate the landscape.
- Consolidate placements where possible with other furniture/built form.

Specifications

- Dimensions: 640(W) x 555(L) x 1239mm (H.)
- Materials:
  - + Surround - stainless steel with pressed pattern.
  - + Lid - stainless steel grade 304 electro polished to a mirror finish.
  - + Laser cut graphics to differentiate permissible deposits.
- Accommodates 120L wheelie bin
- Screw fixed to ground.
- Single sided bins apply to all walkways and shall be co-located adjacent to other vertical infrastructure including walls, columns, piers, etc.
- Four sided bins are permitted in central locations within courtyards or gardens, where waste output is likely to be high (i.e. close to BBQs) and where the scale of the landscape precludes locating all bins at the periphery.
- Inset into lawn/garden beds off paths. Footing to match adjacent paving.

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

4.2 Furniture

Surface mounted w/ base plate and bolt fixing

4.2.3 BIKE HOOPS

Application

- Racks are to be strategically located along Primary Walks and pathways, within close proximity to main building entrances and transport interchanges including bus/tram stops, train stations and bicycle arrival stations.
- Surveillance (CCTV and passive) to be carefully considered to minimise theft and antisocial behaviour.

Specifications

- Dimensions: 800 (L) x 750 mm (H).
- Materials: 48.3 x 2.77 CHS Stainless Steel tube, grade 304 rolled and electro polished to a mirror finish.
- Three footing types:
  + Type 1: Socket Mounted
    Preferred for all applications
  + Type 2: In-situ concrete
    To be used in long term sites where subsurface conditions preclude the use of Socket Mounted racks.
  + Type 3: Surface Mounted
    To be used for temporary applications or where subsurface conditions preclude the use of Socket Mounted or In-situ racks.
- Install at 1000 CTS, with 800mm clearance from adjacent pathways and in accordance with relevant Standards and codes. Refer technical drawings for detailed guidance.

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

Drinking fountain w/ integrated drain installed in concrete

4.2.4 DRINKING FOUNTAINS

Application

- Along pathways and within popular eating and sporting areas.

Specifications

- Dimensions: 260 (W) x 560 (L) x 904mm (H).
- Stainless steel.
- Wheelchair accessible.
- Drinking spout, bottle refill spout, water filter to be included.
- Concrete pavement to have sub surface polycrete pit with metal cover plate in hard anodized finish as per manufacturer's recommendations.
- All plumbing and drainage work to be done in accordance with the local authority regulations.
- Passive irrigation permissible where adjacent to garden beds.

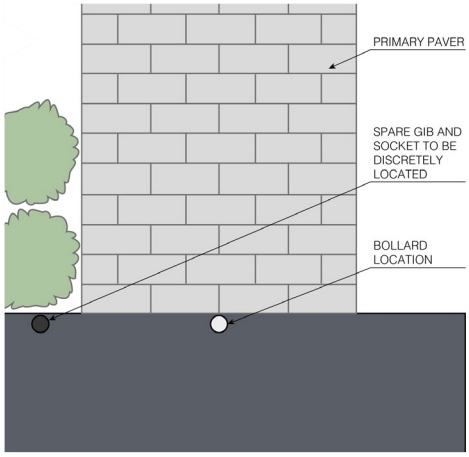
** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

4.2 Furniture

Removable Bollard

Fixed Bollard



Spare Gib and Socket

4.2.5 BOLLARDS

Application

- Provide Monash bollards in main pedestrian pathways and interfaces where vehicular barriers are required.
- Bollards are to be restricted insofar as possible, to peripheral locations across the campus, where restrictions to vehicle access are required.
- Use the minimum number of bollards required at primary walks and paths, loading bays, plazas, forecourts, etc.
- Bollard type to be selected in reference to site context and access requirements.
- Use heavy duty bollards for carpark 'non-pedestrian' applications, as specified in MDCS, to provide crash protection around equipment and back up areas.

Specifications

- Dimensions: 899 (H) x 151mm (dia) cast aluminium body.
- Powder coated finish: Precious Silver Kinetic Pearl: satin 9971-7043K.
- Install at 1400 cts.
- Materials:
  + S/steel cap with Monash acid etched plaque. Details available upon request.
  + Yellow reflective tape to be placed 100mm from bollard top.
- Two bollard fixing types:
  + Type 1: Removable
    Key lock, auto closing cover. For high profile locations where occasional access is required.
  + Type 2: Fixed Concrete footing
    For high profile locations where vehicular access is prohibited.
- All Removable Bollard installations to include a spare gib and socket to be discretely located in close proximity. These allow for safe storage of bollards when access is required. Refer diagram adjacent.

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

4.2 Furniture

Retractable bollard

4.2.6 RETRACTABLE BOLLARD

Application

- For use in high vehicular traffic areas onto campus-proper pedestrian zones in place of booms or gates.
- Locations to be signed off on by Monash University Security and Buildings and Property Strategic Design team.

Specifications

- Vigilant 800 SS Rising Bollard or similar approved.
- Type 4 (non proprietary item) 800 (H) x 200mm (dia) approx. s/steel body.
- Liaise with Monash University Security regarding intercom requirements.
- Co-locate with Monash standard if necessary.
- Retractable/Rising remote access. control, vehicle sensor. For use in key locations where frequent access is required.
- Drainage is to be thoroughly coordinated with civil engineer to ensure longevity and performance of the bollards is maximised.

** Contact SD team for supplier suggestions.*

Bollard placed over malfunctioning retractable bollard

4.2.7 TEMPORARY BOLLARD

Application

- Where temporary bollards are needed in place of neon orange witches hats.
- Where underground services make in situ bollard sleeves installation unfeasible etc.

Specifications

- 60 (dia) x 1000 (H) x 3mm (thick) Aluminium CHS.
- 400 x 400mm base plate welded to CHS. Rubber gasket to underside to minimise scratching of floor finish.
- Yellow reflective tape to be placed 100mm from bollard top.
- Powder coated finish: Precious Silver Kinetic Pearl: satin 9971-7043K.

** Contact SD team for supplier suggestions.*

4.2 Furniture

GPO in garden bed

4.2.8 PEDESTAL POLE GPO

Application

- To be used in areas where general power outlets are required for events, maintenance and otherwise.

Specifications

- Clipsal Moduline Pedestal Pole.
- Dimensions:125 x 125 x 600mm.
- Single Sided with Lockable Door.
- Stainless Steel shroud.
- To be installed 0,4 - 0,5m from path edge and discreetly positioned within garden bed to minimise visual clutter.
- Provision for access to pole by users to be considered to minimise tramping of garden. Use of bluestone stepping stone recommend.

** Contact SD team for supplier suggestions.*

Black commercial grade heavy duty outdoor umbrellas

4.2.9 UMBRELLAS

Application

Where temporary/semi-permanent instant shade is sought.

Specifications

- Rust free anodized aluminium frames.
- Recassen Acrylic – 100% Solution Dyed canvas.
- Waterproof Rating: >300mm water column.
- Telescopic mast preferred.
- Minimum 80km/h wind resistance.
- Preferred colour: black.
- 3 x 3m or 4 x 4m, size determined by location of install.
- Minimum 3 year fabric warranty and 4 year frame warranty.
- Installation
  + Fixed in situ anchors or moveable surface plates to be used where placement is permanent.
  + Free-standing bases to be used.
  + Note: Management of umbrellas to be discussed with users to ensure they are taken down during high wind events where flexibility is required.

** Contact SD team for supplier suggestions.*

4.2 Furniture

Picnic set w/ timber seat battens

Picnic set w/ steel rod seat battens

Adapted DDA picnic set w/ timber seat battens

Adapted picnic set w/ steel rod seat battens

4.2.10 PICNIC SETS

Application

- Standard table and seating option for use where outdoor eating and working opportunities are sought.

Specification

- Batten finish:
  - + Timber: Grey Ironbark (*Euc. paniculata*), Blackbutt (*Euc. pilularis*) Spotted Gum (*Cor. maculata*).
  - + OR Composite timber battens (Futurewood EnviroSlat: Chocolate and Walnut).
  - + OR stainless steel rods.
- Timber battens to be primarily used in high traffic areas and along Primary Walks while steel/composite to be used in less trafficked areas.
- Stainless steel frame and table top
- Set with integrate GPO to be used where outdoor work seating is desired.
- Design can be modified in more bespoke areas to accommodate specific design intents or user needs.

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request*

Double bench seat w/ timber battens

4.2.11 DOUBLE-WIDTH BENCH

Application

- For use where informal double sided seating is desired/required.

Specification

- Dimensions: 851 (W) x 2000 (L) x 430mm (H) approx.
- Batten finish:
  - + Timber: Grey Ironbark (*Euc. paniculata*), Blackbutt (*Euc. pilularis*) Spotted Gum (*Cor. Maculata*)
  - + OR Composite timber battens (Futurewood EnviroSlat: Chocolate and Walnut).
- Timber to be treated with Intergrain UltraDeck Timber Oil.
- Stainless steel frame.
- Three fixing options available:
  - + In situ.
  - + Surface mounted.
  - + Socket mounted.

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request*

4.2 Furniture

Bench seat with back, timber battens

Bench seat with back w/ steel rod battens

4.2.12 BENCH SEAT WITH BACK

Application

- Standard seating option for use where informal and formal seating is desired/required.

Specification

- Dimensions: 2000mm (L) x 498 (W) x 855mm (H.)
- Batten finish:
  - + Timber: Grey Ironbark (*Euc. paniculata*), Blackbutt (*Euc. pilularis*) Spotted Gum (*Cor. Maculata.*)
  - + OR Composite timber battens (Futurewood EnviroSlat: Chocolate and Walnut).
  - + OR stainless steel rods.
- Timber battens to be primarily used in high traffic areas and along Primary Walks while steel/composite to be used in less trafficked areas.
- Stainless steel frame.

** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

Extruded deep bench without back

Extruded deep bench with back

4.2.13 EXTRUDED DEEP BENCH

Application

- For use where generous informal double sided seating is desired/ required along paths and plaza/ gathering spaces and lingering is encouraged.

Specifications:

- Available with or without centralised seat back.
- Perforated stainless steel end plates.
- Depth variable depending on application and user needs/design intent.
- Timber batten finish:
  - + Grey Ironbark (*Euc. paniculata*). Blackbutt (*Euc. pilularis*).
  - + Spotted Gum (*Cor. Maculata*).

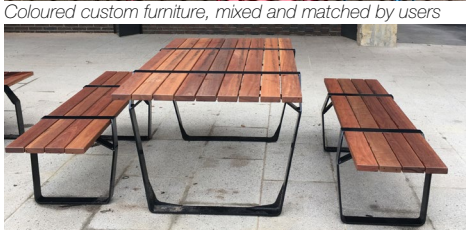
** Contact SD team for supplier suggestions.*

**Shop drawings available upon request.*

4.2 Furniture

Tait Jak and Jill furniture, Clayton

Coloured custom furniture, mixed and matched by users



Tait Flint Table and bench seats

4.2.14 LOOSE EXTERNAL FURNITURE

Application

- To be used in campus locations near food and beverage outlets and in bespoke settings where furniture flexibility greatly improves amenity and adaptability of space. Buildings and Property Strategic Design team to approve all furniture and locations.

Specifications

- Ensure seat and table height is ergonomic and as per best practice.
- Ensure furniture is heavy enough to endure wind but light enough for users to move if necessary.
- No supplier branding permitted .
- Metal furniture:
  + Triple coated mild steel frame.
  + UV stable powder coat colour or galvanised finish.
  + UV stable nylon glides.
  + Caulfield and Clayton have different metal loose furniture families to create strong landscape identities.
- Timber furniture:
  + Timber specifications to match those set out in Picnic Set specs
- Minimum 5 year warranty for all.

Powder coated Hamilton planter, used as HVM measures

Powder coated corten-look raised vegetable planters

4.2.15 CUSTOM PLANTERS

Application

- To be used in areas where planting is required on slab, on roofs, balconies, plazas, as a substitute for bollards, to barriers/boundaries and where temporary medium term planting is desired.

Specifications

- Powder coated stainless steel modular planter box.
- Colour, shape and size application varies depending on location.
- *WaterUps* wicking passive irrigation systems.
- Corten not permissible due to pavement staining. For similar aesthetic, please specify look-alike powder coated finish.
- Please note planter sizes depend on constructability and panel sizes available to manufacturer.
- Bolt down or freestanding.
- Prior to specifying these planters, please ensure a water point is in close proximity to placement.
- Ensure surface planters are placed on are is structurally suited to carrying introduced live loads.

** Contact SD team for supplier suggestions.*

4.3 Lighting

DESIGN PRINCIPLES

Monash University's outdoor lighting suite looks to utilise visually recessive fixtures in an attempt to de-clutter the landscape while maximising performance, ecological sensitivity, user comfort, security and safety. Size, lux levels, fixture choice and operational performance to be developed with the relevant lighting specialists to ensure outcome is considered and compliant. Application of different lights is to be determined by context and adjacencies.

APPLICATION

Lighting is to be used as an utilitarian and atmospheric element in the landscape in the following contexts:

- Adjacent to roads for vehicular safety.
- Adjacent to paths and plazas for pedestrian safety.
- Mood lighting in gardens and encourage night-time activation.
- In back of house areas for safe 24 hour use.
- To showcase artwork and signage.
- Integrated into furniture and contribute to character.

DELIVERY

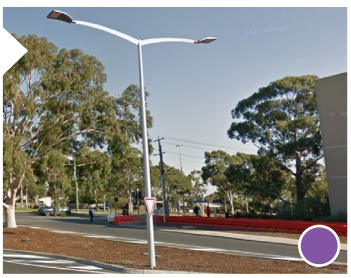
- Lux levels / design criteria to comply with MDCS and Aus Standards.
- Lighting specialist to review, design and document all lighting requirements based on suite below.
- Bespoke integrated lighting and other deviations from DDC-L will be considered in specific instances where appropriate and necessary with approval from Buildings and Property Strategic Design team.
- LED luminaires preferred in all instances.

AUS STANDARD SUBCATEGORY	LANDSCAPE APPLICATION	LIGHTING FIXTURE APPLICATION
PP1	Primary Walks	+ 5m Pedestrian Light Pole (Single bracket) + 5m Pedestrian Light Pole (Dual bracket)
PP3 or PP4 (subject to usage evaluation)	Secondary Walks	+ 5m Pedestrian Light Pole (Single bracket) + 5m Pedestrian Light Pole (Dual bracket)
PP4 (subject to usage evaluation)	Tertiary informal paths and outdoor back of house areas	+ 5m Pedestrian Light Pole (Single bracket) + 5m Pedestrian Light Pole (Dual bracket) + Bollard lights
PR3	Roadways	+ 9m Vehicular Light Pole (Single bracket) + 9m Vehicular Light Pole (Dual bracket) + 9m/5m Pedestrian/vehicular Light Pole (Dual bracket, varied heights) + Pedestrian crossing light (Vic Roads)
PA1,2,3	Outdoor plazas, gathering areas, seating hubs	+ 5m Pedestrian Light Pole (Single bracket) + 5m Pedestrian Light Pole (Dual bracket) + Bollard lights
PP5	Eco-sensitive areas	+ 5m Pedestrian Light Pole (Single bracket) w/ eco-sensitive lumineer + Bollard lights
PC1,2 (subject to usage evaluation)	Car parks	+ 9m Vehicular Light Pole (Single bracket) + 9m Vehicular Light Pole (Dual bracket) + 9m/5m Pedestrian/vehicular Light Pole (Dual bracket, varied heights)
PCD	Car parks around DDA parking	+ 9m Vehicular Light Pole (Single bracket) + 9m Vehicular Light Pole (Dual bracket) + 9m/5m Pedestrian/vehicular Light Pole (Dual bracket, varied heights)










4.3 Lighting

4.3.1 ALUMINIUM LIGHT POLES

Application

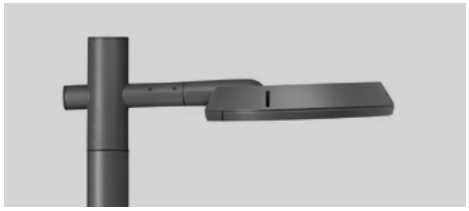
- Monash University standard light poles of varying heights to be used across campuses.
- Height and bracket configurations to be determined by adjacent context, i.e. footpaths, roadways, gathering areas, etc.
- Bespoke lighting poles will be considered where necessary or appropriate. To be coordinated with Buildings and Property Strategic Design team.
- Height specifications dependant on application as per table
- To be strategically placed to not impede pedestrian movements, sight-lines or clutter the landscape.
- Layouts should be considerate of context/placement and should not detract from buildings or signage.
- All light pole base plates, rag bolts, footings must be below ground level.
- Same fitting must be consistently utilised in any one setting.
- All base plates, rag bolts, footings etc. must be below ground level.
- No additional services/added infrastructure to be affixed to standard light pole as they are not design to carry additional loads.

Specifications

- Spun tapered aluminium pole, anodised aluminium finish
- Aluminium welded bracket
- LED pedestrian lantern (various lumineer options available). Choice to be determined by context of use

** Contact SD team for supplier suggestions.*

Versalux: EQUINOX



Weef: RFL500 LED

Iguzzini: Wow

Versalux: StarLED

4.3.2 LUMINAIRE

Application

On external lighting poles throughout campus. Luminaire type and specifications to be determined by:

- Adjacencies.
- Proximity to residential buildings.
- Proximity to eco-sensitive areas.
- Which walks they sit on, e.g. Primary or Secondary walks.
- Overall scheme design language.
- Installation to satisfy lighting requirements as designed by an engineer.
- All base plates, rag bolts, footings etc. must be below ground level.

** Contact SD team for supplier suggestions.*

Specifications

- Mounted to standard light poles or facades were poles are not possible to integrate.
- High efficiency LED.
- Low energy consumption.
- Weather-proof.
- Resistant to corrosion.
- Eco-sensitive amber tones.
- To be installed in accordance with relevant Australian and international standards notably AS1158.6.

4.3 Lighting

White application of Micro Menhir bollard light

4.3.3 BOLLARD LIGHT

Application

- For use along tertiary paths, residential, eco-sensitive and garden-esque settings for low ambient outdoor light.

Specifications

- Recessive bollard light.
- Neutral colours preferred.
- Product with IP65 protection rating.
- Install min 300mm from path edge.
- Protection Rating IP65.
- Light colour temperature: amber .
- Footings to be discreetly installed minimum 150mm below FFL.

** Contact SD team for supplier suggestions.*