

# 1. Playspace Design Principles & Considerations

Playspace designs should be prepared in accordance with the following design principles and standards to ensure consistent quality and functional performance is delivered across the playspace renewal program.

## 1.1 Australian Standards

Playspaces, equipment and surfacing must comply with current Australian Standards for playgrounds, equipment, and surfaces.

In 2023, the standards specifically related to playgrounds include playground equipment and surfacing, wayfinding, access, and mobility for building works focus (e.g. public toilets).

### “Playground equipment and surfacing AS 4685 (set) 2021”:

AS 4685.0:2021	Development, installation, inspection, maintenance, and operation
AS 4685.1:2021	General safety requirements and test methods
AS 4685.2:2021	Additional safety requirements and test methods for swings
AS 4685.3:2021	Additional safety requirements and test methods for slides
AS 4685.4:2021	Additional safety requirements and test methods for cableways
AS 4685.5:2021	Additional specific safety requirements and test methods for carousels
AS 4685.6:2021	Additional safety requirements and test methods for rocking equipment
AS 4685.11:2021	Additional specific safety requirements and test methods for spatial networks

### “Playground Surfacing – Specifications, Requirements and Test Methods AS 4422 (Int):2022.”

### “Design for access and mobility.”

AS 1428.1:2021	General requirements for access - New building work
AS 1428.2-1992	Enhanced and additional requirements - Buildings and facilities
AS 1428.4.2:2018	Means to assist the orientation of people with vision impairment - Wayfinding signs.

## 1.2 Monash Design Standards

Monash Design Standards to be used and incorporated into playground designs and tender specifications. These design standards include various infrastructure and asset categories such as furniture, edgings, signage, and pavements etc.

Intended for city-wide use, the adoption and application of the design standards will progressively strengthen the Monash civic brand within the public realm. These standards are considerate of the key strategic reference documents related to the provision of street and park infrastructure and assets including:

- Open Space Strategy
- Health & Wellbeing Plan

- Gender Equity Framework
- Age Friendly Monash Plan
- Activity Centre Structure Plans
- Playground & Play Space Strategy
- Sustainability Strategy
- ESD Policy
- Strategic Asset Management Plan
- Waste Management Strategy.

### 1.3 Childhood Growth and Development

Play is important to the physical, social, cognitive, and emotional development of children. Through play children learn the essential skills they will need in adulthood. Playspace designs should provide a variety of fun, challenging and inviting play experiences that cater to a range of play types including:

- Physical play including ball games, running games and play on a wide range of equipment types to support fitness and gross motor development.
- Spinning, rocking, and swinging which are important for vestibular development (balance, vision, and hearing).
- Climbing and other adventure play that support spatial awareness and integration of the senses.
- Open ended, creative and imaginative play.
- Engaging with nature
- Social interaction.
- Independent exploration.

### 1.4 Inclusive Play

Besides the obvious benefits of movement, exercise and fitness, physical play provides the building blocks to children's complete development, from balance, vision and hearing to tactile learning and sensory integration. Play benefits young children, young people and the young at heart, and inclusive design needs to consider all ages, cultural backgrounds, and abilities.

#### What is an inclusive playspace?

*Everyone Can Play: A Guideline to Create Inclusive Play* defines an inclusive playspace as:

*... easy to access, easy to move around in, provide a range of play types and challenges, and are equipped with appropriate facilities, in a comfortable environment. Inclusive playspaces allow everyone to stay as long as they choose.<sup>1</sup>*

Inclusive playspaces remove the obstacles and barriers that prevent people from participating in play. They provide access to a variety of play experiences and consider as many people's needs as possible.

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<sup>1,2</sup> NSW Government, *Everyone Can Play: A Guideline to Create Inclusive Play* (Updated 2023) retrieved from [Everyone Can Play – A guideline to create inclusive playspaces \(nsw.gov.au\)](https://www.nsw.gov.au/everyone-can-play)

## Accessibility versus Inclusivity

The *Everyone Can Play* guideline encourages playspace planners, designers, and users to think beyond accessibility needs, so that everyone can realise the joys of play. Accessibility is commonly associated with mobility standards and safety compliance. Accessibility refers to the physical ability of people to access a place or thing. Accessible design predominantly addresses the movement needs of those with disabilities.<sup>2</sup>

When designing for playspaces, complying with accessibility standards across equipment, surfacing and support facilities, is key to creating a playspace for everyone.

### 1.5 Risk

Children have an innate desire to seek out opportunities to take increasing risks, and this is an essential part of their development and learning. Designs should respond positively by providing a range of opportunities for age-appropriate risk taking while having due regard for the well-being of all playspace users. Risk-benefit management and independent safety auditing are important tools in this process.

### 1.6 Appeal to target age group

Select and design play items that challenge and stimulate the target age group. Encourage repeat visits by offering a variety of graded challenges that give children the opportunity to acquire and extend their skills progressively and at their own pace.

### 1.7 Play Value and Equipment Selection

Play value refers to the amount of play opportunity offered by a particular play piece for its cost. Selection of play items should:

- Use a combination of off-the-shelf and natural elements for play.
- Give preference to equipment designs that offer high-level of play opportunity over aesthetic theming.
- Consider opportunities for value adding, for example logs can be used as garden edging, casual seating, and part of a balance sequence for play.
- Complement the play provision in nearby playspaces.

The design should pitch detailing and specification at the 'mid-range' of fixtures, fittings and equipment that are robust, fit for purpose and easy to maintain and replace (i.e. sourced locally).

### 1.8 Nature Play

Designs should offer nature-based play opportunities for open-ended, imaginative, and creative based play. These should encourage exploration of textural materials and natural forms. Natural materials typically include rocks, timber, and plantings.

Council does not support the provision of sand pits or water play in Neighbourhood, Local and Pocket standard Playspaces. These are limited to Regional or District Playspaces due to their high maintenance levels.

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Consider opportunities to create quiet spaces among new or existing designated planting areas while respecting the integrity of existing vegetation, providing children with environments for imaginative play and exploration away from the hustle and bustle of the main play equipment areas.

Play sculptures must exhibit long term durability with minimal ongoing maintenance. See also '[1.9 Play Equipment Materials](#)'

Any timber sculpture should be crafted from hardwood timber and treated with penetrating oil stained, ensuring resistance to decay. The ends or parts of tree trunks or wooden structures embedded directly into the ground or soil should be treated in bitumen paint (or similar treatment) to provide protection from rotting or deterioration.

Reference images



## 1.9 Play Equipment Materials

Durable materials are required for structural elements of play equipment as follows:

- Equipment posts shall be either steel or milled hardwood timber.
- All timber posts to have steel stirrup footings with timber posts mounted above the settled mulch level. No in-ground timber shall be used to avoid the rotting of timber in contact with soil/mulch moisture.
- Timber post tops to have angled weathering protection. Steel capping is preferred to protect end grain from water ingress and rotting.
- Structural timber to be milled hardwood. Use of reclaimed logs is not supported due to the difficulty in guaranteeing supply of suitable fit-for-purpose timber.

- High load bearing structural cross members, such as swing cross bars, shall be steel.
- Play component fixings into timber posts shall have steel plates to support regular tightening of bolts.

Where a natural timber appearance for a play unit is desired a hybrid of steel posts and timber infill panels and decks can be considered. Alternatively, an all-timber unit can be specified using milled hardwood timber with steel stirrups.

All timber elements to be protected with a penetrating clear oil or penetrative stain at installation. This initial protection is required to prevent splitting and warping of the new timber for the first 12-18 months of its service life, after which the timber may be either re-coated or allowed to weather naturally. Finishes that require sanding and regular recoating to maintain an appropriate aesthetic standard are not acceptable.

The use of reclaimed timber steppers can be problematic due to maintenance requirements. Incorporate a balanced mix of materials, utilising timber where appropriate for its aesthetic appeal and warmth while minimising its use to avoid excessive maintenance. Consider using low maintenance alternatives, such as concrete steppers or large rocks. Timber elements in balance sequences shall use milled hardwood timber. The use of reclaimed timber logs, installed horizontally, may be acceptable if restricted to peripheral areas of the playspace and limited to sequences of up to 3 logs. This will ensure ease of replacement should it be required ahead of a wider playspace renewal.

Reference images



### 1.10 Social and Inclusive Spaces

Playspaces provide a broad range of social benefits for local communities. Ensure designs:

- Are welcoming, accessible, and appealing to visitors of all ages, abilities, and cultural backgrounds.
- Facilitate opportunities for social interaction and gatherings.
- Support use as social hubs for local communities, particularly for those with young children.
- Contribute to a sense of community connectedness and well-being.

### 1.11 Accessibility

Designs should support a range of inclusive and social play opportunities that enable children of all abilities to play alongside one another.

Designs should consider the physical and social needs of adult carers supervising play, including aged carers of grandchildren.

A wheelchair accessible path system of minimum 1.5m width (with a preference of up to 1.8m) is required at all playspaces linking car parking, shaded seating, social areas, key play areas and all abilities play items.

Accessible paths and surfaces shall meet Australian Standards for access and mobility and shall have a maximum longitudinal gradient of 1:20 and 1:40 crossfall.

Consideration should be given to children with poor co-ordination and muscle control, as to safety and support rails as well as items of play equipment they may wish to manipulate.

Accessible parking spots should be available as close as possible to the main entrance with provision of a wide continuous pathway system providing links from the accessible parking area to all facilities. Minimum pathway requirement is 1500mm wide – with a preferred option of 1800mm. If the path is narrower than the recommended it is a requirement to provide a section that is 1800mm every 6m for 'overtaking'.

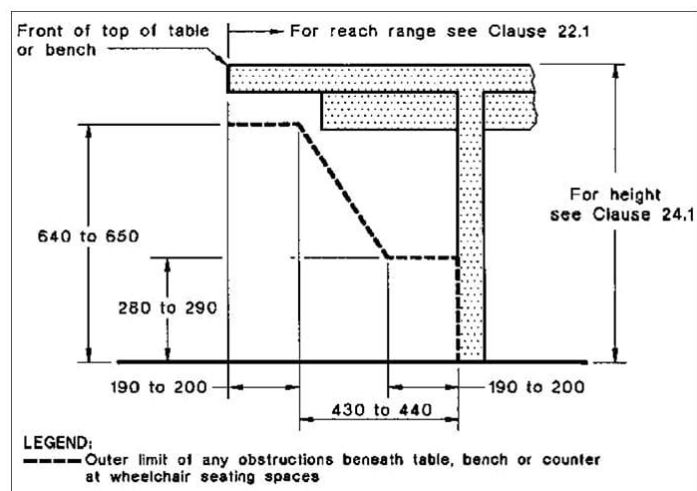
Design the playground with suitable safety elements, such as planting buffers and the integration of rocks or boulders, while ensuring that bollards are strategically placed to enhance safety without hindering access or usability. The use of removable bollard (with secure padlock) can be considered where there are no alternatives to deter unauthorised access especially on the maintenance access entry point.

Asphalt, concrete, or bitumen and/or compacted gravel, is recommended for pathways. Compacted gravel is considered an acceptable accessible path surface and offers a lower cost path options particularly as secondary route.

Rubber matting and synthetic tiles (or similar) can be used for playground areas and under play equipment. Bark chips and grass reduces the ability of people in wheelchairs to move around with ease.

All furniture and fixtures should be easily accessible via pathways. Tables should have 1500mm space around them for wheelchair traffic, and similarly allow 900mm at either side of any benches. Height of clearance beneath the table to the ground should be at least 640-650mm and a minimum clearance of 620mm from table edge to table leg to provide an accessibility for wheelchair users as per AS1428.2 (refer to image 1).

Image 1 – Wheelchair Accessibility Clearance Requirements



Unisex facilities are preferred with time-release toilets needing extra time programmed for people with disabilities.

### 1.12 Amenity

Successful playspaces take into account the qualities and amenity of the space itself as well as the play equipment. Levels of comfort and engagement with the space are important to support longer, more enjoyable stays and repeat visits. It is important to consider:

- Physical protection from wind and sun
- Access and mobility to and within the playspace
- Furniture provision and placement to support comfort and wellbeing.
- An attractive landscape setting that is welcoming and interesting.

### 1.13 Furniture and Fixtures

**Monash Design Standards - Furniture Category** to be used and incorporated into playground designs and tender specifications. Furniture configuration to encourage and facilitate social interaction and supervision of play.

**Bench seating** should be located at all playgrounds to support supervision of play. At least one bench seat should be provided with backrest and armrests and connecting paths (where applicable) should be wheelchair accessible. Additional opportunities for casual seating with rocks, logs and timber platform decks is supported.

**Accessible picnic tables** with wheelchair accessible path access should be provided at neighbourhood, district and regional playspaces. Picnic tables are discretionary at local and pocket playspaces but are desirable to include if budget permits.

**Bins and bike racks** should be provided at neighbourhood, district and regional playspaces and are discretionary at local and pocket playspaces. These should be located at the main entrances to playspaces and near playgrounds.

**Shade sails over play areas** should be provided at district and regional playspaces and neighbourhood playspaces if budget permits.

**Drinking fountains** to be provided within 250m of neighbourhood, district and regional playspaces. These should be stainless steel and DDA compliant (all abilities access) in accordance with Monash Design Standards. Bottle refill accessories are desirable and dog bowls can also be included in the fountain. Dog bowls ideally should be located 20m outside the main playspace area if the reserve is designated 'dog on-lead'.

**BBQs and picnic shelters** should be provided at destination (district and regional) playspaces where longer stays are encouraged. Accessible BBQ options to be provided at district and regional sites with existing BBQs provision.

**Public toilets** are recommended at destination playspaces, such as district and regional scale playspaces, where BBQ facilities are provided and longer stays are encouraged.

**Fences** around playspaces within reserves are not considered standard and generally will not be included in budgets and designs for playground upgrades. Refer to section 1.16 Supervision of Play and Fencing.

#### **1.14 Shade & Wind Protection**

Access to winter sun and summer shade is important for seating, social spaces and particularly for young children's play areas. Provision of shade can influence the length of time visitors will spend at a playspace.

Shade structures such as shade sails or picnic shelters should be routinely included in district and regional playspaces and neighbourhood playspaces if budget permits. However, due to budget constraints provision of shade will be largely reliant on natural shade and wind protection from trees. Where possible, site equipment and play areas to take advantage of natural shade from existing mature trees, and/or specify advanced trees to provide future shade.

Carers can proactively protect children from the sun by having a healthy approach to UV exposure and heeding SunSmart recommendations such as Slip! Slop! Slap! - slipping on long-sleeved clothing, slopping on sunscreen, and slapping on a hat.<sup>3</sup> Surfaces and materials that may reach excessively hot temperatures in direct sun should be avoided, such as stainless-steel slides.

#### **1.15 Relationship between Elements**

Locate activity areas to avoid conflicts between activities and users. For example, orient basketball hoops away from picnic areas and keep quiet nature play areas away from active or potentially noisier play zones.

Consider the flow or sequence of play experiences as users move through a playspace.

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<sup>3</sup> <https://www.sunsmart.com.au/>



Locate equipment with strong swinging or spinning motions to avoid people inadvertently walking across the path of movement.

Locate picnic and seating areas to have a good relationship and view of younger children's play areas.

### **1.16 Neighbouring Residences**

Avoid negative impacts of play features on neighbouring residents where they may cause disturbance, invade privacy, or adversely impact amenity. Playground designs should avoid locating:

- Noisy activities and equipment close to housing such as picnic areas, basketball hoops, flying foxes and musical items.
- Elevated play features where users can look over fences into private spaces.
- Ball game areas where balls can easily be kicked or thrown over a fence.
- Where possible, new playground developments should provide adequate setback from residential boundaries as referenced in PPN27: Understanding the residential development provisions (section A15 and B22<sup>4</sup>) and Monash Overlooking Guidelines for report and consent to vary Building Regulation 84<sup>5</sup>.

### **1.17 Crime Prevention through Environmental Design (CPTED)**

Adopt CPTED principles with particular regard to the following:

- Improve the passive surveillance of playspaces by ensuring play and social areas are visible from surrounding streets and neighbouring residences.
- Ensure good visibility in and around all access paths and play areas.
- Select and position plantings to ensure sightlines are not blocked.

### **1.18 Supervision of Play and Fencing**

In general, Council does not support enclosure of playspaces with fencing as it can reduce accessibility. It is the responsibility of carers to actively supervise young children's play.

Fencing or barriers are generally only used when a safety concern cannot be managed with effective design e.g. to prevent children running out onto busy roads. Council does, however, provide a limited number of fully fenced playspaces to support families that have children with special needs who require the security of fencing for safety reasons e.g. Wellesley Road Reserve, Westerfield Drive Reserve, Viewpoint Reserve, and Cheel Street Reserve playspaces.

If required, safety fencing to be in accordance with Monash Design Standards - Furniture Category (F702.01-02), which is typically installed around sensory themed playspaces, where the primary focus targets children with additional needs.

### **1.19 Integrated Landscape Design**

Respect and enhance the existing landscape character and usage patterns of the wider reserve as follows:

- Ensure connectivity with existing path networks and features.

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<sup>4</sup> [www.planning.vic.gov.au](http://www.planning.vic.gov.au)

<sup>5</sup> [www.monash.vic.gov.au](http://www.monash.vic.gov.au)

- Where appropriate, enhance existing planting character and habitat values e.g. design consideration to be given to playground interface with sensitive conservation bushland.
- Site play equipment with consideration of surrounding uses within and adjacent to the reserve
- Respect existing topography, drainage patterns and overland flow paths.
- Ensure a unified colour scheme is achieved, especially when products from a number of different suppliers are selected for a given site. A limited palette of colours is generally preferred to harmonise with the local environment.

### **1.20 Planting**

The planting design shall provide an attractive setting for the playspace that is also:

- Inviting for sensory play and interest, e.g. flowers, autumn leaves, kernels, seed pods and cones
- Robust and low maintenance
- Non-allergenic, non-toxic and without thorns
- Attract birds and butterflies but not wasps.

Ensure the longevity of the planting scheme by:

- Specifying hardy, drought tolerant and disease resistant plants
- Grading to maximise passive irrigation.
- Ensuring the design is robust to trampling:
  - Specify hardy tufting plants that 'bounce back' within playspaces.
  - Restrict woody and other easily damaged plant species to the perimeter where they are less vulnerable.
  - Avoid planting in key desire lines between equipment and features.
  - Strategic use of rocks and logs to protect plantings within playspaces.
  - Preference for larger stock sizes for within playspaces (e.g. 200mm containers)
  - Consider temporary fencing during plant establishment.
  - For larger scale plantings (e.g. regional and district playspaces) include drip line irrigation systems if budget permits.

Preference for instant turf over grass seeding for reinstatement and new lawn areas within playspaces if budget permits.

### **1.21 Place Making**

Consider opportunities to include features that contribute to a unique local identity and become memorable to children and families. These could include:

- A signature play item.
- Custom design elements.
- Themed play features.
- Celebrate unique site features such as a special tree or landform.
- Educational learning through interpretive signage e.g. sensory playspaces.

## 1.22 Environmentally Sustainable Design (ESD)

As part of our commitment to being Zero Net Carbon by 2025, Monash Council has also developed its own Environmentally Sustainable Design (ESD) Policy for all Council buildings and infrastructure.

Playground designs should be developed in accordance with [Environmentally Sustainable Design \(ESD\) Policy](#) which was endorsed by Council in January 2022.

ESD opportunities and sustainability strategies to be considered as part of playspace design include:

- Assess the entire life cycle of the playspace to identify overall environmental footprint and impact.
- Minimise waste and toxins.
- Reuse and recycle materials wherever possible.
- Reduce stormwater runoff.
- Efficient use of energy, materials, and water.
- Use of locally sourced equipment, products, and materials.
- Use of recycled and/or recyclable materials.
- Use of materials with a low embodied energy such as timber.
- Use of durable materials with minimal on-going maintenance inputs.
- Passive irrigation design and use of drought tolerant plants that have low water requirements.
- Plant selection that supports local biodiversity and habitat values.

## 1.23 Maintenance

On-going maintenance is a critical concern for Council. Maintenance access must be planned for and provided. For ease of maintenance Council prefers:

- Majority of equipment to be off-the-shelf and locally sourced with readily available replacement parts.
- Sealed paths, typically in concrete
- Edgings to be in steel, timber sleepers (50mm width minimum) or concrete. Narrow timber edgings to be avoided.
- Allow 3m wide mowing clearances.
- Natural finish timber rather than painted or stained finishes.
- Plants to be set well back from path edges to ensure they do not overhang and create a maintenance burden when mature.
- Allow for 500mm clearance on a 1.5m wide footpath for bobcat vehicle maintenance purposes.

The maintenance regime will be consistent with the degree of usage and playground classification and service level standards.

## 1.24 Drainage

This section should be read in conjunction with [The Civil Engineering Standard Drawings](#). It's important to note that the following technical guidelines serve as a reference only and should not override the adopted Council standard drawings.

All new council drain designs will be assessed to suit the unique attributes of each site. The following design requirements should be implemented for all submissions of new Council drain design.

- Passive irrigation is recommended and provides an effective solution for watering plants while minimizing the reliance on drainage systems, subject to geotechnical soil report. This approach reduces the need for extensive drainage infrastructure.
- Ensure that drainage system is always connected to the nominated Point of Connection as described in the Legal Point of Discharge Report. Alternative or additional discharge points may be considered for project viability, subject to the Council's discretion.
- In flood-prone areas, conduct appropriate 2D modelling to demonstrate no detrimental impact to surrounding properties and no reduction in flood storage capacity.
- Where possible and especially in flood prone areas, design the drainage infrastructure to accommodate at least a 5% Annual Exceedance Probability (AEP) event due to potential impact of climate change. This may involve sizing pipes and pit structures to accommodate peak flow rates and providing adequate storage capacity to attenuate runoff.
- Where possible, design an overland flow assessment for a 1% AEP event, which corresponds to a 1 in 100-year likelihood event in any given year. This may include with the implementation of green blue infrastructure practices, such as vegetated swales or permeable pavement.
- Consider implementing on-site detention basin if there is excessive impervious surface coverage.
- Implement appropriate grading to prevent localized ponding.
- Drainage plans should include a Pit Schedule showing pit dimensions, depths, surface level, floor levels, pit type, lid type, inlet and outlet dimensions, invert levels and depths, for all proposed and existing pits. Longitudinal sections of proposed drains are only required if specifically stated.
- Existing services must be indicated on plans and long sections. If there is a potential conflict with new drainage, the location and depth of existing services should be verified on site prior to the commencement of works.
- Existing drainage must be indicated on all plans and could subject to further assessment if renewal, upgrade, or relocation is deemed necessary by Council Engineers.
- All drainage pits are to be cast in-situ or precast concrete.
- The minimum gradient of any Council drain is to be 1 in 100 and not flatter than 1 in 200.
- The utilization of Agi pipe is paramount and plays a crucial role to the wider drainage network, necessitating their strategic placement.
- The use of Geofabric around the trench prior to Agi pipe installation is essential for ensuring efficient drainage and long-term functionality of the system. Geofabric acts as a protective barrier, preventing soil particles and debris from entering the drainage system.
- Trench depth may vary to suit the application and ground conditions on site. The depth of any subsurface drainage shall be at least a min. of 500 mm below level of impervious fill.

- Ensure that the minimum Agi pipe is 100mm in diameter and no filter sock is required around Agi pipe installations.
- Inspection openings and flushing points are essential components of Agi drain system. Ensure to position these elements within the garden bed area for easy access and visibility during maintenance.
- Ensure that the minimum diameter of the drainage pipe is 150mm, constructed of sewer quality UPVC, and connected directly to Council drainage network.
- Drainage pipe installation should ensure adequate cover between the final surface level and the top of the pipe. Subject to geotechnical report, for non-trafficable areas, a minimum cover of 300mm is acceptable, while trafficable areas require a minimum cover of at least 450mm. However, a preferred cover of 600mm is recommended for optimal performance and durability.
- For a swale or vegetated swale, it is recommended that the maximum gradient for the swale base be limited to 4% or 1 in 25 to mitigate erosion.
- Organic mulch is not recommended for use within the swale channel, including on the batters, as it has the potential to float and obstruct inlets overflow pits.
- Where possible, a high planting density should instead be utilised along swales to suppress weeds.
- The inlet, outlet and base of the swale should be readily accessible for maintenance vehicles.
- All pit sizes are to conform to the Council Standard (Refer to D01), ensuring they meet the minimum requirements within the playspace to maintain compliance.

### **1.25 Pedestrian and Maintenance Pathways**

The design requirement of pedestrian and maintenance pathways should be implemented as follows:

- All concrete paths must meet a minimum strength grade of 32MPa and feature a 2% Black oxide with light broom finishes.
- Pedestrian pathways should have a thickness of 125mm without the need of reinforcement, which also applies to lighter vehicle movements such as Bobcat.
- Vehicle access entry points and particularly at the traversing points, require a thickness of 150mm, along with a minimum of SL82 reinforcement bars centrally placed.
- The necessity of reinforcement bars for larger concrete slabs, such as basketball courts, may vary depending on recommendations from the geotechnical soil report and the intended use as determined by the Council's Horticultural service team.
- "Trip Stop" product is recommended for installation around existing trees within pedestrian footpath areas to protect tree roots and minimise trip hazards. If Trip Stop is used, then no reinforcement is necessary for installing concrete footpaths.
- The need for reinforcement around existing mature trees, especially to accommodate access for heavy maintenance vehicle, is subject to Council Horticultural team's advice. Efforts will be made to avoid reinforcement if it is deemed unnecessary.