## Exercise equipment

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Also see:

- Technical drawings (DWGS)
- Specifications (SPECS)
1.0 Overview

This category of the LIM has been developed to provide guidance for the design and construction of exercise equipment.

This category addresses the following:
- Exercise equipment area / node
- Exercise equipment
- Surfacing.

Important notes:
- This resource does not try to replicate all of the provisions of Legislation, Australian Standards (AS) and corporate documentation in words and pictures, nor does it seek to define their requirements.
- It aims to draw attention to the fact that effectively applied technical requirements translate into desirable qualities for end users.
- Please refer to the relevant authority websites for updated information and current document distribution dates. These documents are subject to amendments from time to time.
- Product design, manufacture and installation require an appropriately qualified professional to provide site specific solutions.

For further guidance see:
- LIM Drinking fountains
- LIM Landscape drainage
- LIM Paths, trails and tracks
- LIM Planting (landscape)
- LIM Play spaces
- LIM Preliminaries
- LIM Seats
- LIM Shade sails
- LIM Signage
The *Sunshine Coast Environment and Liveability Strategy 2017* currently prescribes that ‘exercise equipment’ may be located in the following open space types, as indicated per table below:

### Table 1: Type of open space

<table>
<thead>
<tr>
<th>Embellishments</th>
<th>Recreation</th>
<th>Landscape</th>
<th>Sport</th>
<th>Trails</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recreation</td>
<td>Landscape</td>
<td>Sport</td>
<td>Trails</td>
</tr>
<tr>
<td>Circum-wide</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>District</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Local</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Civic</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Amenity reserves</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Linear parks</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Landscape corridors</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Council-wide</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>District</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Linear parks</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Landscape corridors</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Council-wide</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>District</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Specific purpose</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Recreation trails</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Conservation reserves</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nature reserves</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bushland reserves</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Natural amenity reserves</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Coastal reserves</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Further technical information for Sport, Trails and Environmental reserves will be incorporated at a later date. In the interim, the basic Recreation / Landscape information can be adapted to suit the site specific solution required.

**Please note**
- The design and construction of coastal and waterways infrastructure is to be consistent with adjacent open space land usage.
- The design and construction of recreation trails infrastructure is to be consistent with adjacent open space land usage or any endorsed SCC document (e.g. Coastal Pathway Master Plan)
- It is expected that council’s open space documents will be reviewed from time to time and this table may be subject to change.
3.0 Performance criteria and quick guide(s)

Criteria direction

The performance criteria in the following sections of this information sheet document, must be satisfied in order for the embellishment to provide a best practice solution.

4.0 Planning and design guidance
Best practice guidance for:
• planning
• design.

5.0 Embellishment guidance
Best practice guidance for:
• the design,
• manufacture
• installation.

6.0 Positioning guidance
Best practice guidance for:
• the way embellishments are placed or arranged.

7.0 Equal access guidance
Best practice guidance for:
• solutions that are accessible for ALL users.

8.0 Recommended standards
Best practice guidance for:
• Legislation
• Australian Standards / industry guidelines
• Approvals / authorised person
• Council additional requirements.

9.0 Sustainability
Best practice guidance for:
• achieving strategic sustainability.

10.0 Project management and maintenance
Best practice guidance for:
• project management and maintenance.

Quick criteria guides
see page(s) below
Quick criteria guide – exercise equipment

Embellishments should be designed / selected and installed as follows:
1. Fit for purpose, appropriately positioned and accessible.
2. Durable, robust and safe (suitable for corrosive environments).
3. Vandal resistant with parts that are easily replaceable.
4. Easy to maintain (with appropriate warranty and workmanship).

Please note:
Further guidance and clarification of the content on this page, can be found in the relevant sections of this information sheet.

Planning / design / positioning

- Locate nearby facilities such as toilets, drinking fountains and other activity areas
- Install at locations with good opportunity for passive surveillance. Orientate exercise equipment towards views
- Equipment layout and footprint design – by a professional exercise equipment designer in conjunction with a qualified fitness professional in accordance with AS for play spaces (including play equipment and surfacing)
- Plant trees at time of installation. Position north and west of equipment for future shade

Exercise equipment requirements

- Provide options for a full body workout and equipment designed for different ages and abilities
  - include equipment which targets cardiovascular and resistance training
  - include a combination of both static and kinetic stations
  - designed to be ergonomically correct
- Equipment instruction sign – provided by manufacturer. Must provide clear and accessible instructions for safe use, preferably on equipment in highly visible position
- Signage – Park activity entry sign – mandatory. Locate outside safety zone or in garden beds or at most visible location near exercise area. Ensure sign post(s) do not become collision points
- Equipment materials – 316 stainless steel, aluminium, HDPE / poly panels, timber
- Components are to be easily repairable and / or replaceable
- Surfacing – designed to prevent pooling of water, runoff must be directed away from equipment, pathways and off safety zone. Edge treatments must be concrete, finished flush with adjoining surfaces

Footprint surface and fixing method

- Surfacing – must be slip resistant and have luminance contrast with the background against which it is viewed
- Unitary (rubber) surfacing is preferred, installed on concrete or cement treated base, secured as per manufacturer’s recommendations
- Loose-fill surfacing – site specific
- Design surface area to minimise cross contamination of loose-fill surfaces by other materials
- Equipment must be bolt down to finish surface, for ease of replacement. Use anti-vandal ‘armour rings’ or equivalent
- Concrete footing as per engineering specification
4.0 Planning and design guidance

Best practice guidance for planning and design of embellishments includes:

Planning

Exercise equipment design must include:

- Compliance with relevant legislation, standards and corporate documentation (including positioning and equal access guidance).
- Design by a professional exercise equipment designer in conjunction with a qualified fitness professional in accordance with Australian standards and industry best practice.
- Design to minimise risk of injury by installing surfacing (softfall) material.
- Community consultation is recommended to engage the user and ensure the best outcome.
- Design for provision of shade, either by planting new shade trees at installation, or shade sails, or other appropriate structure.
- Provision for different ages and abilities where applicable.
- Simple, functional and durable elements.

Activity area embellishments

Exercise equipment areas may include the following embellishments:

- Exercise equipment
- Surfacing
- Shade – shade trees and shade sails
- Planting
- Edge treatment
- Drainage
- Fencing (including pedestrian gates and vehicle gates)
- Pathways
- Additional park facilities – barbecues, bins, bicycle racks, drinking fountains, seats, picnic tables and benches, shelters, taps.
- Signage
- Car parking.
5.0 Embellishment guidance

Best practice guidance for the design, manufacture and installation of embellishments includes:

See 3.0 Performance criteria and quick guide(s) for a summary of council’s minimum requirements.

General requirements

Embellishments must be designed / selected and installed as follows:

1. Fit for purpose, appropriately positioned and accessible
   - Universal access.
   - Comfortable and suitable for the average person.
   - See 6.0 Positioning Guidance and 7.0 Equal Access Guidance.

2. Durable, robust and safe (suitable for corrosive environments)
   - Made from materials that will be durable and can be suitably protected from exterior elements, such as salt spray and UV exposure.
   - Robust and sturdy to withstand constant public use and be resistant to vandalism.
   - Fixings are to be 316 marine grade stainless steel (unless otherwise stated).

3. Vandal resistant with parts that are easily replaceable
   - Tamper proof fixings should be used.
   - Graffiti protection coatings applied (where applicable).
   - Fire retardant (where applicable).

4. Easy to maintain (with appropriate warranty and workmanship)
   - Warranties should be as listed below.
   - Easily repairable or replaceable.
   - Sourced locally and use standard fittings.
   - Reputable suppliers should be used who keep a supply of stock parts on hand for the life of the product.
   - Use sustainable materials, although sustainability needs to be considered over the lifetime of the embellishment.
   - Install on paved, concrete or other hard surfaces.

5. Comply with relevant standards / legislation / corporate documents / approvals
   - Manufactured to engineering specifications (where applicable).
   - See 8.0 Recommended Standards.

Warranty and asset life

<table>
<thead>
<tr>
<th>Product / embellishment</th>
<th>Warranty (suggested minimum)</th>
<th>Asset life (typical useful life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>exercise equipment – static / kinetic (static tends to have a longer typical useful life)</td>
<td>10 years</td>
<td>15 years $^1$</td>
</tr>
<tr>
<td>wet pour ethylene propylene diene monomer (EPDM)</td>
<td>3 years</td>
<td>10 years $^1$</td>
</tr>
<tr>
<td>Play Matta (or equivalent)</td>
<td>6 years</td>
<td></td>
</tr>
<tr>
<td>concrete edging</td>
<td>2 years</td>
<td>15 years $^1$</td>
</tr>
</tbody>
</table>

$^1$ Sunshine Coast Council Asset Management Plan 2017/18–2022/23 – Parks and Gardens

Sunshine Coast Open Space Landscape Infrastructure Manual April 2019
Exercise equipment area / node

Exercise equipment areas are to be designed and constructed to comply with Australian Standards for play spaces / grounds (including play equipment and surfacing)

Exercise equipment development and design:

- Equipment layout and footprint must be designed by a professional exercise equipment designer in conjunction with a qualified fitness professional
- Ensure compliance with the AS 4685 SET:2014 *Playground equipment and surfacing Set.*
  - Particular attention should be drawn towards, AS 4685.0:2017 – *Playground equipment and surfacing – Development, installation, inspection, maintenance and operation* - contains information on matters that should be considered before exercise equipment is built
- The standard specifies requirements for exercise equipment to ensure a continuing level of function and safety, such as:
  - development
  - installation
  - inspection
  - maintenance
  - operation.
- Is intended for use by designers, manufacturers and installers of exercise equipment, as well as operators of the playground.

- The objective of the Standard is to minimise the risk of injury to people using equipment, by providing guidelines for:
  - sighting and developing exercise equipment
  - product information requirements, instructions and operating procedures to support sound design.
  - selection of appropriate equipment.
  - minimisation of operational hazards.
- Exercise equipment should be designed with a view to:
  - the needs of the local community
  - park user numbers.
- The Standards provide guidance on:
  - planning
  - site selection
  - site information / conditions
  - services
  - regulations, and the like
  - design
  - surfacing
  - shade and sun protection.

Further technical advice can be found in the LIM *Exercise equipment ‘Positioning’* section of this document.
Exercise equipment

Exercise equipment is to be designed and constructed with compliance to the Australian Standards for play spaces / playgrounds (including play equipment and surfacing)

General requirements

• Exercise equipment must comply with AS 4685 SET:2014 Playground equipment and surfacing Set.
• Exercise equipment over 3.0m in height, and shade sails require building approval.
• The quality of exercise equipment must be of commercial quality standard.
• Components are to easily repairable and / or replaceable.
• Should provide options for a full body workout, with equipment designed for different ages and abilities:
  ○ include equipment which targets cardiovascular fitness.
  ○ include equipment aimed at resistance training for improved strength.
  ○ designed to be ergonomically correct

See Table 2: Exercise equipment body area identification for further guidance.

• Design equipment for appropriate demographic and consider multi-generational equipment. See LIM Play spaces.
• A combination of both static and kinetic stations. Static pieces are less popular, but are lower maintenance and have a longer life span.

Materials, fixings and finishes

• All coastal locations (east of the Bruce Highway), must be constructed of coastal hardy materials and fixings such as:
  ○ 316 Stainless steel
  ○ Aluminium
  ○ HDPE / Poly panels
  ○ Timber (appropriate species, mounted on marine grade 316 stainless steel stirrups – with approval from SCC Parks and Gardens).
  ○ It is preferred that timber products are to be treated with alkaline copper quaternary (ACQ), a water based wood preservative. CCA is not to be used.
• Hinterland areas - materials, finishes and fixings shall be specified as stated above, but 316 Stainless Steel elements are optional.
• See LIM Introduction and design principles for further guidance regarding coastal / hinterland locations.
• Bolt down exercise equipment is preferred for ease of replacement.
• Flush transition to adjacent levels to minimise trip hazards.
<table>
<thead>
<tr>
<th>Exercise equipment type</th>
<th>Body muscle areas</th>
<th>Abdominals</th>
<th>Arms</th>
<th>Back / Chest</th>
<th>Upper / lower legs / buttocks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>core trunk muscles, quadriceps, hamstrings, calves and balance</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>shoulders, obliques, gluteus medius, upper back, shoulders and arms</td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>quadriceps, hamstrings, calves, tibialis anterior and core trunk muscles</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>quadriceps, hamstrings, gluteus and hip flexors (iliopoulos)</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>quadriceps, hamstrings and gluteus</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
</tbody>
</table>

**Table 2: exercise equipment target body area identification**

**continued... Table 2**

<table>
<thead>
<tr>
<th>Exercise equipment type</th>
<th>Body muscle areas</th>
<th>Abdominals</th>
<th>Arms</th>
<th>Back / Chest</th>
<th>Upper / lower legs / buttocks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>deltoit, rotator cuff, trapezius to a lesser degree: chest and back muscles</td>
<td></td>
<td></td>
<td></td>
<td>●●</td>
</tr>
<tr>
<td></td>
<td>pectoralis major, latissimus dorsi, triceps and biceps</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Row: latissimus dorsi and biceps</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Push-ups: pectoralis major and triceps</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pull up: mainly biceps, and to a lesser degree latissimus dorsi</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dip: triceps and to a lesser degree pectoralis</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>upper and lower abdominals</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
</tbody>
</table>
**Surfacing (safety under-surfacing)**

**Surfacing choices**

- Surfacing to comply with Australian Standards AS 4422:2016 – Playground Surfacing – Specifications, requirements and test method.
- Unitary surfacing (e.g. rubber) is preferred and should be used for:
  - equipment that is attached to a path
  - kinetic equipment that has moving parts, particularly those with hydraulic rams. This prevents particles entering the mechanism.
- Unitary (rubber) surfacing is generally preferred by fitness users.
- Surfacing material choice and installation methods should be carefully considered in areas which are prone to flooding.
- Surfacing must be designed to prevent pooling of water. Runoff must be directed away from equipment, pathways and off safety zone.
- Edge treatment must be concrete, finished flush with adjoining surfaces.

**Unitary (rubber) surfacing**

- Must meet or exceed the impact attenuation requirements of AS 4422:2016.
- Must be installed on a concrete base or a cement treated base (CTB) with a concrete mowing edge to the perimeter.
- Use lighter colours or mixed flecked colours, to minimise surface heat and potential extreme localised heat.
- Extend the unitary surfacing a minimum 100mm below other safety surface and backfill. Secure as per manufacturers recommendations.
- Include a flush transition to adjacent levels to minimise trip hazards.

**Loose-fill surfacing**

Rubber surfacing is preferred for exercise equipment, however if loose-fill surfacing is to be used it must be as per the following:

- Must meet or exceed the impact attenuation requirements of AS 4422.
- Loose-fill surfacing must not be used in certain circumstances (as per those listed in the surfacing choices section).
- Must have a minimum depth of 400mm (or greater where required by free fall heights and attenuation test certificate). Please note sand surfacing may require greater depths as per attenuation test certificate.
- The playground footprint requires an edging lip to ensure loose fill surfacing does not spill out of the playground, however ensure that the main path of travel has a flush join to prevent ‘tramlining’ of prams and wheelchairs, and trip hazards.
- Cross contamination by loose-fill creates an ongoing maintenance issue.
- Exercise equipment must NOT have geofabric installed between the ground and safety surfacing.

See **LIM Exercise equipment – technical drawings** for further guidance.

See **LIM Play spaces – technical drawings** for further guidance.
Shade – shade trees and shade sails

Shade – general

- See AS 4685.0 - Playground equipment and surfacing - Development, installation, inspection, maintenance and operation.
- Provision should be made in each exercise area for areas of sun protection and shade
- Care should be taken with respect to site equipment so that it is correctly positioned with respect to sun exposure. Uncovered platforms and some under-surfacing materials can become uncomfortably hot if exposed to too much direct sunlight.
- To maximise the shade coverage, choose materials with maximum Ultraviolet Radiation (UVR) protection factor ratings. ‘The highest risk hours are between 9.00am and 3.00pm Eastern Standard Time (EST) in summer’ 2
- A site specific ‘shade audit’ may be undertaken to document shade at different times of the day. Guidelines on how to do this can be found on the Sunsmart website.
- Shade sails may be required over larger exercise hubs, in appropriate locations.

Shade trees

- Plant shade trees at the time of exercise equipment installation, particularly in local parks. Minimum planting offset 1.2m from edge of a path.
- Install shade trees to the north and west to protect the equipment at the hottest part of the day.
- Use existing trees for shade where the design can be sensitive to tree root requirements, under guidance of a qualified arborist.

Shade sails

- See LIM Shade sails for specifications and clearance heights

Planting

As per AS 4685.0 Playground Equipment and Surfacing:

- ‘Plants are valuable design elements in playgrounds and should be selected for their potential to provide for play, as well as for their:
  - visual amenity
  - sensory properties
  - potential for shade
  - potential to withstand compaction, extremes of climate and the impact of users.
- Avoid plants with leaves with cutting edges, sharp thorns, spikes, poisonous parts. Avoid species notorious for limb dropping.’
- Avoid foliage, flowers or seeds that could cause choking hazards.

- Avoid fruit bearing plants that may attract significant levels of birds and bats as this becomes a maintenance issue.
- Choose plants that will provide clear sight-lines for parent and carer supervision (CPTED guidelines).
- For any planting advice contact a qualified arborist.

See LIM Planting (landscape) for further guidance.

Tree root growth

- Consider both existing and future tree root growth potential in playground footprints.
- For any advice on tree roots and specific treatments contact a qualified arborist.

See LIM Vegetation management for further guidance.

2 Creating Shade at Public Facilities Policy and Guidelines
Edge treatment

Edge treatments must be concrete.
• The exercise platform is raised to provide adequate drainage. A 2.5m wide turf batter to all edging, with a preferred slope 1:6 (maximum 1:4). Ensure connecting pathways are accessible.
• Concrete edging must be used for all rubber surfacing.

See LIM Exercise equipment – technical drawings for further guidance.

Drainage

Exercise equipment areas must have adequate sub-surface and surface drainage to avoid nuisance water pooling.
• Sub-surface drainage plans must be provided.
• A brass ‘D’ marker must be fitted to both sides of the play space edging to indicate the position of sub-surface drainage pipes.
• Drainage must be discharged outside of the exercise equipment footprint.
• Drainage material must not contaminate surfacing (safety softfall).
• Geofabric must NOT be installed between the ground and surfacing. This method is causing safety and maintenance issues, particularly when geofabric isn’t installed correctly and starts lifting (creates a trip hazard).
• Surface runoff must be directed away from equipment and pathways.
• Drainage grates are to comply with AS 1428.1 Design for Access and Mobility set. Sub-surface drainage is to be installed and connected as per SCC plumbing advice.

See LIM Landscape drainage for further guidance.

Pathways

Provide a ‘continuous path of travel’ from the car park all the way through to the exercise equipment.
• Provide a minimum 2.0m wide pathway to all exercise equipment areas, include a 200mm wide ‘at grade’ area both sides of path.
• Unitary (rubber) surfacing can be used to integrate exercise items within the exercise area footprint.

See LIM Paths trails tracks for further guidance.

Maintenance access

Maintenance access to the site and facilities must be considered, in particular it must ensure:
• Maintenance vehicle access to exercise area loose fill surfacing (bark, sand, takura manufactured wood or equivalent) so it can be replenished.
• Emergency vehicle access.

See LIM Fences and gates for further guidance.

Car parking

See LIM Parking for further guidance.
Signage

Note: This section should be read in conjunction with:
- LIM Signage

- Park activity entry sign (installed at entrance, start or most appropriate visible location of an exercise node) – mandatory. Ensure signs posts do not create collision points when using equipment.

See the following for further guidance:
- Figure 1: Typical sign type example
- LIM Signage – Parks and gardens suite.
- LIM Signage for further guidance.

Exercise equipment user signs

Include the following sign elements:
- Clear instructions for use, including instructions for equipment adjustment. Preferably on equipment in a highly visible position (provided by exercise equipment manufacturer).
- Diagrams representing proper use and target muscle groups.
- Identification of any use restrictions such as age, ability.
- Information to encourage warm up and warm down.
- Install signage at a position which can be seen while using the equipment (preferably on the equipment, rather than in an adjoining garden bed).

Additional park facilities

See the following LIM categories for further guidance:
- LIM Bins
- LIM Bicycle racks and rails
- LIM Drinking fountains
- LIM Seats.
6.0 Positioning guidance

Best practice guidance for the way embellishments are placed or arranged, includes:

Positioning

Site location

- Locate equipment away from residential areas to avoid noise impact, where possible.
- Locate equipment stations near toilets and drinking fountains where possible.
- Consider locating stations near playground equipment, where appropriate, to allow parents to exercise while supervising children.
- Crime Prevention through Environmental Design (CPTED) principles are important for positioning an exercise equipment station to ensure that users feel safe, with opportunity for casual surveillance. Create a viable exercise destination by installing clusters of equipment (either a series of smaller hubs or one larger hub).
- Due to the potential of the exercise equipment being used by children, carefully consider the locations near hazards such as:
  - adjacent to roads
  - steep slopes
  - waterways
  - hazardous and dangerous goods installations
  - fire and flood prone areas
  - sewers and stormwater drains
  - underground services, power poles and overhead power lines.

- Avoid land subject to flooding:
- Exercise trails with single or dual station equipment may suit linear parks along a river or pathway.
- Well positioned equipment along a pathway can encourage joggers and walkers to exercise more muscle groups.

Site setout

- Align equipment so that the users can see the location of the next station.
- Orientate the equipment to provide a view for the user if possible.

See the following figures for further guidance:
- Figure 2: Plan view – two piece exercise station
- Figure 3: Plan – exercise circuit
- Figure 4: Plan – exercise station with shade sail (multiple pieces).
Clearances

See Table 3: Positioning guidance offsets for further guidance.

Table 3: Positioning guidance offsets

<table>
<thead>
<tr>
<th>Embellishment</th>
<th>Distance from</th>
<th>Minimum distance</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise equipment element</td>
<td>clear area to any other embellishment</td>
<td>varies</td>
<td>safety zones apply – refer manufacturer for clearances</td>
</tr>
<tr>
<td>Exercise equipment station</td>
<td>edge</td>
<td>2.5m</td>
<td>for deck mower clearances (where possible)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Avoid creating small difficult to mow areas</td>
</tr>
</tbody>
</table>

See Table 3: Positioning guidance offsets for further guidance.
Figure 2: Plan – two piece exercise station  
(not to scale – for guidance only – site specific design required)
Figure 3: Plan – exercise circuit
(not to scale – for guidance only – site specific design required)
Figure 4: Plan – exercise station with shade sail (multiple pieces)
(not to scale – for guidance only – site specific design required)
7.0 Equal access guidance

Implement equal access for all users by adopting the following principles:

The Disability Discrimination Act (DDA) defines ‘premises’ as the whole of the built environment and includes existing buildings, new or proposed buildings, transport systems, car parks, pathways, and public parks and gardens.

Elements required for equal access

- Embellishments must be designed in accordance with AS1428 Design for Access & Mobility.
- Ensure that exercise equipment is connected to a ‘continuous accessible path of travel’ to enable equal access for people who use wheelchairs. Ensure that the path of travel is connected to an accessible car park space.
- Install exercise equipment in consistent locations for ease of recognition by people with vision impairment.
- Provide wheelchair, mobility aid and pram equal access to exercise equipment stations in order to:
  - provide an inclusive experience.
  - encourage group social interaction.
  - aid rehabilitation following injury.
  - provide opportunity for development of improved strength mobility and flexibility.
- When installing exercise equipment, consider the location of the existing embellishments. If there is insufficient circulation space, a different location may be required.
- Install exercise equipment at a safe operating offset from the edge of a pathway, to provide clearance for pedestrians and cyclists.
- Avoid finished height difference between a concrete slab and adjoining surfaces to prevent trip hazards and to prevent ‘tramlining’ of pram, bicycle and wheelchair wheels.
- Unitary (rubber) surfacing facilitates transition from pathway to exercise stations.

Colour Requirements

- Provide sufficient contrast with the background against which the object is viewed and has a luminance factor of not less than 30%, for ease of identification by people with vision impairment.
  - Where luminance contrast cannot be achieved (such as grey aluminium furniture on grey concrete), luminance contrast can be improved by providing a coloured base slab which has a minimum 30% luminance contrast with the embellishment base, resulting in the embellishment being more visible for people who have low vision and people who are blind.
- Consider designing nodes with a contrasting coloured concrete, or a variation in surface texture, to enable people with a disability to identify the location of embellishments along a pathway.
8.0 Recommended standards

Embellishment design, manufacture and installation require an appropriately qualified professional to provide site specific solutions.

Where Australian Standards or part thereof have been adopted by legislation, they are a legal requirement.

Embellishments should satisfy the following requirements, including but not limited to:

Legislation

International legislation
- The United Nations (UN) – Convention on the Rights of Persons with Disabilities. Recognises the inherent dignity and worth and the equal and inalienable rights of all members of the human family.

National legislation
- Disability Discrimination Act (DDA) 1992. Provides protection for everyone in Australia against disadvantage based upon disability. Disability discrimination happens when people with a disability are treated less fairly than people without a disability. Access to exercise equipment falls under the definition of ‘premises’ ‘a place (whether enclosed or built on or not)’ (DDA Section 4).

Queensland legislation
- Anti-Discrimination Act 1991 (ADAQ Section 46). To promote equality of opportunity for everyone and to protect them from unfair discrimination. Access to exercise equipment falls under the provision of services.
- Building Act 1975 and regulations – e.g. Building Regulation 2006. Governs all building work in Queensland and empowers the regulation of certain aspects of buildings and structures.
- Local Government Act 2009 (LGA) and regulations. Provides for the extent and nature of local government responsibilities and powers.
- Planning Act 2016 and regulations, establishes the framework for Queensland’s planning system and provides the foundation for elements such as plan-making, development assessment and dispute resolution.
- Work Health and Safety Act 2011 and regulations e.g. Work Health and Safety Regulation 2011. To provide comprehensively for work health and safety. Designers have a duty of care to comply with, and to ensure, as far as is reasonably practical, that the design is without risks to health and safety.

See LIM Preliminaries for further guidance on overarching categories, such as:
- Cultural Heritage
- Health and Safety
- Environmental Management
- Vegetation Management.

See LIM Introduction and Design Principles for other overarching core documents, such as:
- Legislation
- Australian Standards / industry guidelines
- Approvals / authorised person
- Corporate documents.

Please note:
Please refer to the relevant authority websites for updated information and current document distribution dates. These documents are subject to amendments from time to time.
Australian Standards / industry guidelines

Please note:
It is the informed opinion that in the absence of a separate 'exercise equipment' Standard, that the advice is as follows:
• Outdoor exercise equipment installed in a public place, provided for use by both adults and / or children, falls under the definition and jurisdiction of the Australian Playground Standard sets; AS 4685:2017 and AS 4422:2016
SCC has adopted this stance for all exercise equipment.

National Construction Code (NCC)
Exercise equipment shall be developed in accordance with the NCC (current edition):
• Building Code of Australia (BCA) Volumes 1 and 2.
• Plumbing Code of Australia (PCA) Volume 3.

Safety in design (SiD)
Include Safety in Design (SiD) principles to eliminate, or if not reasonably practical, minimise risks to health and safety throughout the design, construction and life of the embellishment.

See the following for additional safety guidance:
• LIM Preliminaries – General – Health and safety.

Exercise equipment nodes
Exercise equipment nodes shall be developed, installed, inspected, maintained and operated in accordance with:
• AS 4685.0 2017 – Playground equipment and surfacing Part 0 – Development, installation, inspection, maintenance and operation. This standard contains information on matters that should be considered before exercise equipment is built.

Exercise equipment
Exercise equipment shall be designed and manufactured in accordance with Australia’s Standard for play equipment:
• AS 4685:2014 – Playground Equipment and Surfacing set:
  ○ AS 4685.0:2017 – Playground equipment and surfacing – Development, installation, inspection, maintenance and operation.

Exercise equipment surfacing
Exercise equipment surfacing shall be designed and manufactured in accordance with:
• AS 4422:2016 – Playground Surfacing – Specifications, requirements and test method. To ensure that the playground surface will reduce the impact of falls, thereby preventing serious injury.

Designing for shade
• AS 4174:2018 Knitted and woven shade fabrics a Standard for the classification, performance and labelling of knitted and woven shade fabrics for horticulture and human protection applications.
**Designing for access and inclusion**

- **AS 1428 Set – Design for Access and Mobility.** Design requirements for new building work to provide access for people with disabilities. This Standard is referenced in legislation.

**Designing for safety (CPTED)**


**Trees**

- **AS 4970:2009 – Protection of Trees on Development Sites.** Provides guidance on the principles for protecting trees on land subject to development.

**Approvals / authorised person**

**Certification**

Certification is required from a certified play space compliance engineer detailing the following:

- The design, construction and installation of the exercise equipment have been undertaken to the manufacturer’s specifications and comply with Australian Standards for Play Spaces AS 4685 Set – Playground equipment and surfacing Set and AS 4422:2016 – Playground surfacing – Specifications, requirements and test method and all other relevant statutory requirements codes, regulations and standards.
- All equipment pieces have a compliance plate in accordance with Australian Standards for Play Spaces AS 4685 Set.

**Surfacing (softfall)**

An exercise equipment safety surface impact attenuation test certificate is required detailing:

- That surfacing (softfall) on site complies with Australian Standards for Play Spaces 4422:2016 – Playground surfacing – Specifications, requirements and test method.

**Signage**

- All ‘park activity entry’ signs and ‘regulatory’ signs appropriate for exercise equipment must refer to **LIM Signage – Parks and gardens suite** for guidance, technical drawings and graphic design templates.

**Coastal management district**

- Ensure appropriate environmental approvals are obtained and the conditions observed where any building work is proposed in the Coastal Management District.
- Consult with Queensland Government Department of State Development, Manufacture, Infrastructure and Planning (DSDMIP) – State Assessment and Referral Agency (SARA) for application forms, guidelines and information sheets.

**Other**

- Department of Transport and Main Roads (DTMR) approval is required for works near state controlled roads. This applies to any part of the road reserve including footpath, kerb and channelling, nature strip and traffic island.
- Ensure all relevant approvals are obtained from the appropriate governing bodies and all conditions are observed.
SC Council additional requirements

Corporate documents

- *Sunshine Coast Planning Scheme 2014* – provides guidance and technical advice for development.
- *Sunshine Coast Environment and Liveability Strategy 2017* – sets guiding principles, an implementation plan and technical detail to address; the natural environment, population growth, climate change, renewable energy, create liveable spaces and fulfill expectations of future generations.
- *Sunshine Coast Social Strategy 2015* – aims to maintain the community’s high perceptions and levels of safety. It also promotes wellbeing and ensures an older population is supported and provided for.
- *Sunshine Coast Access and Inclusion Plan 2011-2016* and *Sunshine Coast Council Access and Inclusion Policy, 5 Oct 2011* – to guide the establishment and implementation of access and inclusion and promote social justice and social inclusion. The aim is to reduce barriers to civic and community participation.
- *Sunshine Coast Positive Ageing Strategy 2011-2016* – addresses the changing needs of older people on the Sunshine Coast.
- *Smart City Implementation Plan 2016-2019* – lays out a structure, program of works and deliverables for the implementation of the Smart City Framework into Council projects, systems and processes.
- *Sunshine Coast Manual for Erosion and Sediment Control (V1.2) Nov 2008* – a manual that focuses on land clearing, civil works and allotment building.

Corporate liaison

Developer delivered assets

- SCC Development Services – all works associated with any development application.

Council delivered assets

- SCC Parks and Gardens – recreation parks, amenity reserves, linear parks, landscape corridors, sports grounds and recreation trails enquiries relating to asset management, business planning and direction.
- SCC Design and Placemaking Services – recreation parks, amenity reserves, linear parks, landscape corridors, sports grounds, specific purpose (sports), recreation trails and streetscape / centres enquiries relating to design.
- SCC Sport and Community Venues – sports ground planning and asset management.
- SCC Environmental Operations – recreation trails, foreshore infrastructure, environment reserves, constructed waterbodies and wetlands.
9.0 Sustainability

To attain strategic sustainability the following principles should be considered where suitable:

**Materials and products**

- Local materials and local products.
- Material selection should be based on recycled or recyclable material wherever possible.
- Metals / plastics that can be:
  - recycled at the end of productive life
  - used in a buy back scheme.
- Finishes / treatments / products that are the least harmful to the environment and park users.
- Ensure materials are flame retardant and resistant to fire.
- Consider maintenance, whole of life costs and aesthetic values.
- Materials and design which initially costs more can result in reduced future maintenance costs and / or longer useful life.
- Made from robust materials that are vandal and corrosion resistant (particularly in coastal areas).
- Install erosion and sediment control products and practices such as mulching to reduce erosion on excavated areas during construction.

**Tree and vegetation management**

- Protect existing trees by using tree root sensitive design and / or appropriate setbacks to ensure the ongoing provision of shade and amenity (consult a qualified arborist).
- Protect existing trees from damage during project delivery to ensure continued environmental benefits such as oxygen production, temperature control, flood mitigation and stormwater filtration.
- Plant new trees to provide additional shade in the future as well as successional tree population.
- Plan to incorporate all relevant design guidelines at the design stage of a project. This will reduce the need for premature vegetation losses as a result of conflict or ongoing costly maintenance to maintain clearances.
- Plan to select species tolerant to the local conditions at the design phase and choose quality specimens at the project delivery phase to minimise early losses and reduce ongoing maintenance.
- Ensure new plantings are appropriately setback from infrastructure. This will reduce long-term maintenance requirements and maximise the longevity of plantings.

**Planning for future works**

- Co-locate similar embellishments to reduce infrastructure – such as water use facilities and underground services.
- Consider climate change impacts on embellishment location and construction. In coastal areas, or near waterways, design should consider rise in sea level predictions and severe storm events. Near bushland areas, design should consider the occurrence of bushfires.
- Positioning should consider flooding, seasonal / ephemeral water bodies and water table changes.
- As a sustainable approach, consider installation of additional conduits under concrete slabs for future provision where electrical / irrigation services are planned. Ensure conduit is capped to prevent ingress of water and debris.
- Where underground services/utilities are installed, set brass markers to concrete slab edges to indicate the location.

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Sunshine Coast Environment and Liveability Strategy 2017
10.0 Project management and maintenance

Documentation
The submission of design documentation and technical specifications for each item (where applicable), is to include, but not be limited to:

• approvals, searches, compliant drawings and documentation – written compliance with relevant legislation, Australian Standards and corporate documents (including specifications and access and mobility requirements)
• preliminary site setup (refer LIM category) – compliance with safety, tree protection, erosion and sediment control measures
• technical information – the manufacturer’s product, installation, inspection, warranties and maintenance information
• materials – specification of materials
• schedule of finishes
• engineered design and any required certifications
• unusual requirements for handling or installation and competency requirements
• workplace health and safety plan, where applicable
• environmental management plan (EMP) and / or erosion and sediment control plan, where applicable.

Practical completion – technical information to be supplied:
At practical completion, the contractor must supply technical specifications, including but not limited to:

• certification – inspections, final approvals and documentation
• as constructed drawings and specifications which should detail the location of any sub-surface services (e.g. drainage, electrical)
• operational manuals – inspection / maintenance details including parts and service manuals, and manufacturer’s guarantees
• construction and / or maintenance tools including non-standard maintenance tools for bolt tightening and replacement parts
• all required signage should be installed prior to hand-over of the asset, where applicable
• manufacturer’s guarantees / warranties and any other documents or items, including quality management compliance and accreditation.

Maintenance period and / or defects liability period

Developer delivered assets
The development maintenance period and requirements are nominated in the conditions of approval (decision notice).

Council delivered assets
The maintenance period and requirements are nominated in the letter of appointment of contractor (contract).

Prior to the end of the pre-determined maintenance period or defects liability period, a ‘pre-handover inspection’ should be conducted by an authorised council officer. The following items will apply:

• Compliance Audit
• Rectification Action Plan (RAP) is provided identifying any faults and non-compliance
• RAP items are to be rectified prior to handover.
Documentation – additional exercise equipment documentation

In addition to the standard documentation listed above, the submission of exercise equipment design documentation and technical specifications for each item (where applicable), is to include, but not be limited to:

- **specifications** – detailed requirements see LIM Exercise equipment – specifications.
- **detailed design with dimensioned drawings** – illustrating equipment details, plan view, elevations and levels. These drawings must show the relationship of equipment to any other elements to be constructed in the area (including any shade sails). Drawings must detail:
  - minimum fall zone dimensions
  - impact absorbing surfacing requirements
  - intended age range.
- **exercise equipment details** – installation manuals and documentation outlining:
  - the need for any special tools, lifting devices, space required for installation and correct orientation.
  - details of the required foundations / footings – anchorage in the ground and design and location of the foundation / footings.
  - specification and availability of exercise equipment spare parts.
- **certified engineering drawings** – (including footing designs) and soil test results.
- **building approval** – for equipment over 3.0m in height and shade sails.

During construction – additional exercise equipment requirements

During construction, the contractor must supply technical information including but not limited to:

- **submit installer’s statements** – verifying that the substrate is satisfactory for receiving the installation.
- **confirmation of footing compliance**
- **confirmation of sub-surface compliance and discharge outside playground footprint.**

Practical completion – additional exercise equipment technical information to be supplied

In addition to the standard information listed above, at practical completion, the contractor must supply technical specifications for each item in the exercise equipment footprint and including but not limited to:

- **certification** – inspections, final approvals and documentation from a certified play space compliance engineer detailing:
  - that the design, construction and installation of the exercise equipment are undertaken to the manufacturers specifications and comply with Australian Standards for Play Spaces AS 4685, AS 4422 and all other relevant statutory requirements codes, regulations and standards.
  - play space safety surface impact attenuation test certificate – for surfacing as found on site complies with Australian Standards for Play Spaces AS 4422 Play Space Surfacing – Specifications, Requirements and Test Method.
  - building approvals where applicable.
- **compliance plate** – all equipment pieces must have a compliance plate in accordance with Australian Standards for Play Spaces AS 4685 Play Space Equipment Safety set.

- **exercise equipment installation, inspection and maintenance** – Australian Standards for Play Spaces AS 4685 Play Spaces and Play Equipment – Part 1: Development, Installation, Inspection, Maintenance and Operation sets out specific guidelines for maintenance and specifies that the manufacturer should supply product installation, inspection and maintenance information for each item of equipment, illustrated where possible. It should also include:
  - maintenance requirements – the manufacturer’s instructions will specify the type, method and frequency of the inspections and maintenance regime and if a particular level of competence is necessary for inspection and / or maintenance.
  - manufacturer’s instructions should specify all matters that require maintenance inspection such as servicing points and methods, replacement parts specifications, disposal, spare parts, surface finishes, drainage holes, and surfacing.
  - maintenance manual and tool kit – the manufacturer must supply a maintenance manual and tool kit, including any special play equipment tools required.
  - running-in requirements – such as tightening of fastenings.
- **all relevant signage** – should be installed prior to the acceptance of the works
- ‘post installation checklist’ is to be submitted prior to the exercise equipment being open to the public.
Sunshine Coast Open Space Landscape Infrastructure Manual DISCLAIMER

Acknowledgements
Council wishes to thank all contributors and stakeholders involved in the development of this document.

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