Sydney Olympic Park Authority

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Introduction to the Manual

The Sydney Olympic Parklands, previously known as Millennium Parklands, Parklands Elements Design Manual (PEDM) is the outcome of a comprehensive design and study of the landscape of the Parklands. It provides the basis for the selection and palette of architectural structures, paving, lighting, park furniture and signage in the Parklands, both in the immediate term and over the next 10 to 15 years. All items are conceived as a co-ordinated suite of elements that give character and identity to Sydney Olympic Parklands. The manual is a compilation of existing selected design elements from the Urban Elements Design Manual (UEDM) designed for the public domain in the Urban Core of Sydney Olympic Park, selected items from the UEDM Appendix 1, Non-SOP Venues and new elements specific to the Parklands. The UEDM elements chosen are design elements that are suited to the parkland setting of Sydney Olympic Parklands and reinforce consistency and links of elements between Olympic Park and the Parklands. The relevant UEDM elements have been included in the PEDM for reference.

The Parklands Elements Design Manual contains four sections: Introduction; How to use the Manual; Parkland Elements Design; Design Guidelines. This manual allows designers to develop detailed designs for the Parklands which will be consistent site-wide.

Sydney Olympic Parklands Concept Plan & Related Documents

In summary, the Millennium Parklands Concept Plan approved in 1997 and designed by park designers HASSELL, Peter Walker and Partners and Bruce Mackenzie Design is the guiding document providing the basis and vision for all design work within the Parklands. The Illustrative Concept Plan and Study Area Boundary Plan are included for reference at the end of this section and the precinct concept plans can be referred to in Appendix C. The Concept Plan was developed further in 1998 resulting in the production of the “Millennium Parklands Concept Development Report”, the “Site Wide Planting Strategy” and their accompanying drawings. These documents provide further guidance and rationale behind the siting and design of the parkland elements within the greater context of the Parklands.

The term Millenium Parklands has been used for some years. It is widely known and has been used throughout the legislation. The Sydney Olympic Park Authority is reviewing the naming of areas since ‘Sydney Olympic Park’ has been registered by the Geographical Names Board as a formal place name. Therefore, ‘Sydney Olympic Parklands’, and the more general term ‘Parklands’, are used in this document so as not to pre-empt the naming process.

The concept for the Parklands is to provide a place and a program, which is treasured by the community for the recreational, inspirational and educational experiences, derived from a diversity of distinctly Australian natural and cultural settings. The purpose of the concept plan is to join the diverse landscape and cultural elements within the Parklands to form a cohesive,
understandable, visually and spatially rich park for the 21st Century and beyond. The landscape settings of the Parklands (fresh and saltwater wetlands, forest, mangroves, grasslands, remediated areas etc.) provides park patrons with a story or narrative of the Parklands. Herein lies the essence of the Sydney Olympic Parklands physical concept - it is not about elements being added to the landscape, but instead the landscape itself that it is implicit and integral to the parkland experience.

The landscape of the Parklands is:

* **identifiable** as Sydney Olympic Parklands.
* **believable** - being authentic to its time and place.
* **sustainable** - robust, based on inbuilt systems diversity.
* **educational** - by example, how people can co-exist in harmony with their environment.
* **renewing** - to its users.
* **nurturing** - to the plants, animals and people who live in and enjoy the parklands.

The role of the parkland elements is to unite the various settings and enhance the user experience of the Parklands; and to assist in the creation of a distinctive and special place, which is treasured by the community.

The Design Image of Sydney Olympic Parklands

The image of the Sydney Olympic Parklands is of an inspiring set of unique natural and built resources which are maintained, managed, programmed and used in a way which creates a national and international treasure.

The Parklands design image moves well beyond the concept of the picturesque landscape, beyond images of embalmed nature and beyond the realm of landscape as a spectacle. The Parklands image is rich and diverse as the imagination and creativity of 21st century people.

The image of the landscape of the Parklands is one of a series of functioning and self-sustaining ecosystems that offer settings of great beauty and renewal to the people who enjoy them. The objective of the physical concept is to ensure that users receive an "experience of nature" that is as close as possible to that obtainable from immersion in pristine environments of a similar type.

The experience of the Parklands should be unique. The image described above guides this objective and the Parklands Elements Design Manual addresses this image by the selection of parkland elements which are of simple materials, uncomplicated detailing, appropriately scaled, functional, robust and responsive to the principles of environmentally sustainable development (ESD).
millennium parklands CONCEPT PLAN

Illustrative Concept Plan
How to Use the Manual

Overview

The Parklands Elements Design Manual is a comprehensive guide to the detailed design elements of the Sydney Olympic Parklands including architectural large elements (shade structures, picnic shelters), paving, park furniture, lighting and signage.

Its primary objective is to ensure a consistency of detail and quality in the various precincts of the Parklands, whilst ensuring flexibility for the parkland elements to respond to their particular setting.

The Parklands Elements Design Manual is organised into four main sections: Parklands Elements Design Manual; How to use the Manual; Parklands Elements Design and Design Guidelines.

Layout of the Manual

The layout of the PEDM is based on the layout of the Urban Elements Design Manual (UEDM), allowing both documents to be coordinated.

The first three sections of the PEDM provide a design overview and a description on how to use the manual and are titled as follows:
- The Parklands Elements Design Manual
- How to Use the Manual
- Parklands Elements Design

The fourth section of the PEDM: Design Guidelines is divided into separate parts dealing with Large Elements, Paving, Park Furniture, Lighting and Signage.

The Parklands Elements Schedule at the beginning of this section lists all the design elements selected for Sydney Olympic Parklands. The listings that are shaded are items particular to Sydney Olympic Parklands and have been specially designed / chosen for the Parklands. The elements on a white background are items chosen from the UEDM and UEDM Appendix 1 that are suited to the setting of the Parklands and have been included in the PEDM for reference.

The Design Guidelines sheets illustrate each Parklands Element in detail with required technical data and design descriptions and is referred to by a discipline letter code and element reference number (eg. PLE1 - Parklands Large Elements item 1; PSF05 - Parklands Furniture item 05). The status of each of these Parklands Elements is also shown, whether the element is design intent only, or has been fully resolved with final details.
How to Use the Manual

For selected large elements there are also two appendices that can be referred to for more information. Appendix A details the materials palette selected for each large element. Appendix B contains the briefing notes specific to each elements’ siting, program requirements, maintenance and management considerations, intended function and level of use.

The structure of the Manual allows for information to be updated. The Design Guidelines sections have reference numbers with a specific discipline letter code enabling expansion or deletion within the section. The PEDM is seen to be a flexible document enabling new details to be inserted over time and existing elements to be reviewed.

Relationship to Other Documents

The following list of documents are to be used as reference material when preparing detailed designs for the Parklands and to gain a further understanding of the masterplan concepts for the Parklands:

* “Millennium Parklands Concept Plan” report, December 1997
* “Millennium Parklands Concept Development”, December 1998
* “Millennium Parklands Site Wide Planting Strategy”, December 1998
* Urban Elements Design Manual, October 2001
* Draft OCA Fencing Strategy, October 1997
* Draft Access Strategy, Sydney Olympic Parklands, (under revision)
* Parklands 2020 - The Concept Plan for Sydney Olympic Parklands, August 2002
* Plan of Management, Millennium Parklands (under preparation)
* Sydney Olympic Park Master Plan, May 2002
Parklands Elements Design
Introduction to Parklands Elements

The Parklands Elements Design Manual schedules those items that occur within the Parklands and assist in its appreciation. These include: large elements, paving, park furniture, lighting and signage. The Parklands elements are derived from an architectural language of simple materials, uncomplicated detailing and direct construction. The design and detailing of the elements are expressive of their principle functions. The elements are seen as part of a broader ‘family’ with some localised variations reflecting the character of the Parklands settings. Accessibility has been a primary consideration in the detailing of the various elements and their finishes.

Design Principles and Strategies

The guiding design principles and strategies for the Parklands have emerged from the design work of the Concept Designers: Hassell Pty Ltd, Peter Walker & Partners and Bruce Mackenzie Design. These design principles respect the following considerations:

* Park Identification
Elements provide an image that is memorable, identifiable across the Parklands and the design responsive to the surroundings.

* Uncomplicated / Direct Design
Elements derived from simple materials, uncomplicated detailing and direct construction.

* Functional Considerations
The elements consider a consistent management and maintenance strategy. The design and detailing of the elements are expressive of their principle functions. The elements have been designed and selected for future availability of parts, longevity, robustness and cost effectiveness. Structural systems should be sought that are flexible and can be adapted to cater for a number of elements and site applications.

* Environmental Considerations
Environmental considerations are clearly expressed in the design of elements and pursue the environmental sustainable principle. The use of renewable resources and the elements are responsive to ESD principles.

* User comfort Considerations
The elements have been developed to provide full amenity to all users including meeting OCA’s access requirements.

* Parklands Program Considerations
Design of the elements should be flexible to allow for future adaptations or uses.

The Parklands elements should generally be clustered around activity nodes. Within such areas elements are tucked into, and clustered together in the broad reaforested bands of vegetation or ‘walls’ - one of the central themes of the Parklands Concept Plan.
The Parklands elements are simple, robust and designed as part of the Parklands settings in which they occur, rather than being features in the setting. In remote parts of the Parklands sparse provision of facilities is desirable so as to promote the experience of ‘nature’ and isolation.

Colour and Finish Selection

In keeping with environmental sustainability practices consideration has been given to material life cycles; manufacturing & transportation energy costs; and recycled materials are used where possible:

* recycled or sustainable unstained hardwood timber
* galvanised steel / stainless steel
* unfinished, off form, exposed aggregate concrete
* decomposed granite / gravels
* recycled crushed brick
* asphalitic concrete

Access Considerations

A site that is accessible to all people, regardless of their physical or mental ability is a major consideration in the design of the Parklands. The area extensive and will provide a range of challenges and opportunities.

Major nodes of access in all precincts, will incorporate integrated amenities / information facilities, shelter, seating etc. at these nodes. The nodes will establish bases for all people, including those with disabilities. The extent of movement beyond these bases will be discretionary, an individual will be able to make a decision about suitable access from the nodes by appropriate signage and interpretive material.

The key aim of the Sydney Olympic Parklands Access Strategy is to facilitate the policies of the NSW Government and OCA to demonstrate best practice in the provision of equitable access for all. Key objectives are to provide:

* an understanding of the operating methods of people with a range of disabilities
* specific design information to meet the needs of these people
* a mechanism ensuring full implementation and maintenance of accessible environments.

The implementation of the recommendations of the PEDM details alongside the Parklands Access Strategy and AS1428.1: Design for Access and Mobility will ensure a consistent approach to access in the Parklands.
# Parklands Elements Schedule

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<tr>
<th>Ref</th>
<th>Description</th>
<th>Principle</th>
<th>Document</th>
<th>Revision</th>
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</thead>
<tbody>
<tr>
<td>PLE0</td>
<td>Major Walls - Gabions</td>
<td>To be used for large scale retaining works</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PLE1</td>
<td>Minor Walls - Concrete</td>
<td>To be used where a high quality finish is required eg, park entries, car parks, etc</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>PLE2</td>
<td>Typical Steps</td>
<td>For use on minor embankments</td>
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<td>PLE3</td>
<td>Typical Ramp</td>
<td>Material to match adjoining path type</td>
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<td>PLE4.01</td>
<td>Boardwalk - Typical Section</td>
<td>To be used in freshwater wetlands and mangrove areas</td>
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<td>July 2002</td>
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<td>PLE4.02</td>
<td>Boardwalk - Wetlands</td>
<td>Used to cross water-bodies in wetland areas</td>
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<td>July 2002</td>
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<td>PLE4.03</td>
<td>Boardwalk - Examples of Platforms</td>
<td>To be located at changes of direction and rest points</td>
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<td>July 2002</td>
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<td>PLE4.05</td>
<td>Boardwalk - Edge Details</td>
<td>Vary to suit viewing and interpretation opportunities</td>
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<td>July 2002</td>
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<tr>
<td>PLE5.01</td>
<td>Footbridge</td>
<td>To be used where terrain becomes rough or water course cuts across path</td>
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<td>July 2002</td>
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<tr>
<td>PLE5.02</td>
<td>Boardwalk - Balustrade Details</td>
<td>For use above height of 600mm</td>
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<td>July 2002</td>
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<tr>
<td>PLE5.03</td>
<td>Boardwalk - Balustrade Details</td>
<td>For use above height of 600mm</td>
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<td>July 2002</td>
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<td>PLE6.01</td>
<td>Brick Pit Viewing Platforms</td>
<td>To be used at selected places on Brick Pit rim only</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PLE6.02</td>
<td>Platforms - Haslams Creek</td>
<td>Associated with pathways along Haslams Creek</td>
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<td>July 2002</td>
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<tr>
<td>PLE6.03</td>
<td>Platforms / Lookouts</td>
<td>Informal and hill top lookouts</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PLE7.01</td>
<td>Picnic Shelter</td>
<td>For use in various locations throughout the Parklands</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PLE7.02</td>
<td>Picnic Shelter - Siting</td>
<td>Should be sited along edges of clearings</td>
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<td>July 2002</td>
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<td>PLE7.03</td>
<td>Picnic Shelter - Elevations / Plan</td>
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<td>PEDM</td>
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<td>PLE7.04</td>
<td>Picnic Shelter</td>
<td>Materials &amp; drainage</td>
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<td>PLE7.05</td>
<td>Picnic Shelter</td>
<td>Construction details</td>
<td>PEDM</td>
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<td>PLE7.06</td>
<td>Picnic Shelter - Enclosing Walls</td>
<td>May be introduced to provide shelter or privacy</td>
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<td>July 2002</td>
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<td>PLE7.07</td>
<td>Picnic Shelter - Roof Edges</td>
<td>Can be modified to introduce filtered light</td>
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<td>July 2002</td>
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<td>PLE7.08</td>
<td>Picnic Shelter - Large Formats</td>
<td>Standard extended to cater for larger groups</td>
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<tr>
<td>PLE8</td>
<td>Parklands - Shade Structure</td>
<td>For use where permanent shade is required</td>
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<tr>
<td>PLE9</td>
<td>Barbecue</td>
<td>To be installed adjacent to picnic shelters</td>
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<tr>
<td>PLE10</td>
<td>Enclosure Wall Unit / Drinkstation</td>
<td>To provide further functional extensions &amp; amenities to picnic shelters</td>
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<td>July 2002</td>
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<tr>
<td>PLE11</td>
<td>Vehicle Gate</td>
<td>To be used where necessary to block vehicular access</td>
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<td>July 2002</td>
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<tr>
<td>PLE12</td>
<td>Vehicle Barrier</td>
<td>To be used where necessary to control vehicular parking &amp; access</td>
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<td>PLE13</td>
<td>Bird Hide</td>
<td>TBC</td>
<td>PEDM</td>
<td>TBC</td>
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<td>PLE14</td>
<td>Shade Structures</td>
<td>Off the shelf</td>
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### PAVING

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<tr>
<td>P3</td>
<td>Typical Insitu Kerb</td>
<td>Typical detail for access roads or car park areas</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>P5</td>
<td>Typical Insitu Swale</td>
<td>Reduced dimensions to suit scale.</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>PP6</td>
<td>Typical Insitu Flush Kerb</td>
<td>UEDM adapted-500 width. Reduced dimensions to suit park scale.</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PP8a+b</td>
<td>Typical Planted Swales</td>
<td>Turf or native options</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>P11</td>
<td>Typical Decomposed Granite</td>
<td>Permeable pavement for special use areas ie, RANAD precinct.</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>PP13a</td>
<td>Washed Concrete Pavement</td>
<td>Pathway junctions and nodes</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PP13b</td>
<td>Washed Concrete Pavement – Joint Details</td>
<td>Pathway junctions and nodes</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>P15</td>
<td>Typical Kerb Ramp</td>
<td>To signal hazard</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>Ref</td>
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<td>Principle</td>
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<td>Revision</td>
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<td>P16</td>
<td>Typical Vehicle Crossover - Asphalt</td>
<td>To signal vehicle crossovers at the kerb</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>PP17</td>
<td>Typical Hazard Tactiles</td>
<td>To be used only when there is a potential conflict between pedestrians and vehicles</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>P22</td>
<td>Typical AC Edge</td>
<td>Minimal finishing edge to AC pavement</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>PP23</td>
<td>Typical Timber Edge</td>
<td>Flush edge to grass or planting</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>P26</td>
<td>Typical Service Cover - General</td>
<td>Minimise impact of service covers &amp; ensure integration with surrounding pavements. Details for &lt;600mm</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>PP36</td>
<td>Leaf Litter Pavement</td>
<td>Tertiary paths, for low use trails, ie Newington Woodlands</td>
<td>PEDM</td>
<td>July 2002</td>
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</table>

**PARKLANDS FURNITURE**

<p>| PSF02a+b | Parklands Seat | UEDM SF02a+b adapted | PEDM | July 2002 |
| PSF05    | Parklands Table Seats (1800)         | UEDM SF05 adapted     | PEDM | July 2002 |
| PSF05a   | Parklands Bench                      | UEDM SF05a - Table Seat 900mm adapted                                  | PEDM | July 2002 |
| PSF06    | Waterfront Bench                     | Recycled timber baulk, for use in foreshore areas                       | PEDM | July 2002 |
| PSF08    | Picnic Set                           | For use in &amp; around picnic shelters, wall mounted or freestanding       | PEDM | July 2002 |
| SF10     | Bubbler – Building Mounted           | Mounted on building wall / Wheelchair accessible                        | UEDM | Oct. 2001 |
| PSF11    | Bubbler – Freestanding               | Where Required                                                      | PEDM | July 2002 |
| PSF15    | Park Bollard - Removable &amp; Fixed     | Where required                                                      | PEDM | July 2002 |
| SF21     | Bin Mount - Perpendicular            | For use around catering sites/car parks. Contingent on operational requirements | UEDM | Oct. 2001 |
| SF22     | Bin Mount - Parallel                 | For use around catering sites/car parks. Contingent on operational requirements | UEDM | Oct. 2001 |</p>
<table>
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<tr>
<td>SF24a</td>
<td>Bin Station - Temporary</td>
<td>Using 240L bins, custom designed pictograms, visible recycling station to facilitate waste management. Contingent on operational requirements</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF25</td>
<td>Bike Rack - Free Standing</td>
<td>Simple, robust rack for short term, secure storage, in car parks, &amp; selected locations</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>SF28</td>
<td>Phone - Wall Mounted</td>
<td>Standard Telstra telephone – Majestic booth for single or multiple installation</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF35</td>
<td>Standpipe &amp; Housing</td>
<td>Protection for standpipe</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>PSF38a</td>
<td>Permanent Frog Fence</td>
<td>Refer to SOPA Frog Management Plan for location principles</td>
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<td>PSF38b</td>
<td>Permanent Frog Fence</td>
<td>Refer to SOPA Frog Management Plan for location principles</td>
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<td>PSF39</td>
<td>Chainmesh Fence</td>
<td>Standard galv. Chainmesh fence Non PVC for low profile areas</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>PSF41</td>
<td>Flagpole</td>
<td>As installed at Homebush Bay Ferry Terminal</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>SF42a</td>
<td>Typical Fencing - Palisade</td>
<td>UEDM fence provides design intent. Detail design for specific applications in high profile landscapes only</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>SF42b</td>
<td>Typical Fencing - Palisade</td>
<td>Photographic illustrations</td>
<td>PEDM</td>
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<td>SF43</td>
<td>Typical Gate - Palisade</td>
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<td>SF44</td>
<td>Replica Heritage Fence</td>
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<td>SF45</td>
<td>Café Chairs</td>
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<td>SF46</td>
<td>Café Tables</td>
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<td>SF47</td>
<td>Café/Market Umbrellas</td>
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**Approach to Large Elements** (see *Introduction to Selected Large Elements* for further information)
- Ecological sustainability
- Longevity
- Adaptability
- Currency of approach
- Form
- Cost effectiveness
- Assemblage / directness
- Direct use of materials
- Siting / application
Introduction to Selected Large Elements

Introduction

The following section outlines the design rational and design details for the large elements of the Parklands Elements Design Manual and builds upon ideas embodied in the Concept Development Report (HASSELL, 1998). This document should be seen as a guide to future designers and aims to ensure the development of detailed designs for Sydney Olympic Parklands that will be consistent site wide.

For more information in relation to the material palette selected for individual elements refer to Appendix A. For briefing notes specific to each elements' siting, program requirements, intended function and level of use, as well as more general notes on Parklands design, maintenance and management considerations, refer to Appendix B.

Design Approach

The landscape of Sydney Olympic Park is not intended to be seen as a fixed element but as an ongoing process of nature evolving. A primary objective of the Parklands Concept plan is to ensure that users receive an experience of nature that is as close as possible to that obtainable from immersion in pristine environments of a similar type. Hence it is the landscape itself and the lessons of its re-creation on remediated land that should be implicit and integral to the Parklands experience.

The resulting experience of Sydney Olympic Park will be one of juxtaposition; of the subtle complexities of nature and the contrasting spectacle of the Sydney Olympic Park Urban Core’s built environment.

The Parklands elements should contribute to this juxtaposition while being in harmony with the landscape of the Parklands. They should be designed and positioned so as to strike an empathy with the landscape and reinforce and enhance the experience of the setting.

Elements should generally be easily demountable and removable, leaving little trace on the underlying landscape.

Role within Parklands

The role of the Parklands Elements will be to assist visitors to enjoy and appreciate the Parklands environment. In particular, Parklands elements will, where appropriate, provide:
- a heightened experience for visitors;
- appreciation of the landscape and its natural systems and processes;
- access to the park environs for all;
- shelter from the elements;
- comfort through provision of seating, amenities and drink stations;
- legibility and understanding of the Parklands through their layout, the use of signage and interpretive text.
Introduction to Selected Large Elements

Characteristics

Elements should be of a high quality and designed to exhibit the following characteristics:

* Ecological Sustainability
Elements should have minimal physical impact upon the landscape, to preserve the integrity of the landscape and to allow the flexibility of future generations to utilise the Parklands as they see fit. Elements should be demountable, if possible, leaving little trace. Elements should use sustainable and or recycled materials with low levels of embodied energy. They should also display an economy of means and minimise energy consumption in their installation, maintenance and ultimately in their removal and disposal.

* Longevity
Elements should be designed to be long lasting, preferably developing character over time, and where possible, involve minimum maintenance. Elements should be designed so that component parts can be replaced easily if they become damaged or require renewal. In order to achieve consistency throughout the development of the Parklands, materials and finishes should be selected which are ageless or are unlikely to be discontinued.

* Adaptability
Elements should be designed to allow unrestricted use of the Parklands for both the current and future programs of use.

* Currency of Approach
Elements should reflect a currency in their design and use of available technologies and in effect become reflections of the aspirations of their era.

* Form
The form of the various Parklands elements should be purposeful, responding to their program of uses. However, this needs to be balanced with the contextual ideal that the elements exist in harmony with the landscape and reinforce the landscape character.

* Cost Effectiveness
Elements should be designed to provide cost-effective solutions through the appropriate selection of materials and practical methods of construction.

* Assemblage/Directness
The assemblage of materials and components should exhibit directness and should be reduced to those which are essential to the elements’ function. A variety of complex structural systems to suit individual locations should be resisted in favour of the development of a structural system and method of detailing that is flexible and able to be adapted to cater for a range of elements and site applications.
Introduction to Selected Large Elements

*Material Selection*

The Parklands elements should exhibit a responsible and direct use of materials. For these reasons, a simple palette of materials has been chosen (refer to Appendix A for a detailed list of each element and its material breakdown).

*Siting/Application*

The elements are in the majority of instances to be sited within or on the fringes of the forested ‘walls’ that form the major movement corridors throughout the Parklands. In this way the elements do not become spectacles in themselves but instead become integral to the landscape experience. For specific siting notes which apply to each individual element refer to Appendix B or for more information refer to the Millennium Parklands Concept Development Plans and Report (HASSELL, 1998).
Major Walls - Gabions

MATERIAL: Galvanised prefabricated wire baskets filled with suitable rock material

COMPOSITION: Rock can be hand faced to suit or machine placed if not visually significant.

CONSTRUCTION: To engineers final specification

NOTE: Basket size:
- 1000 x 1000 x 2000 (standard)
- 500 x 500 x 2000

SECTION 1:50
CONTEXT Landscape Design
Minor Walls - Concrete

These walls may be used in areas adjacent to the urban core, Parklands entries, car parks and other zones where a high quality finish is desirable and/or the use of a gabion wall is not appropriate.

**MATERIALS/ FINISH:**

Unfinished concrete.
White cement, selected sand 'Nepean river gravel' aggregate (20mm).
Steel reinforcing.
Light sand blasted finish.
Vertical joints at 2000 mm max. centres.
Matt finish anti graffiti paint.

**NOTE:** Wall can also be used as a freestanding element to act as support base for other attachments i.e. signs, seats, bins, bike racks etc.
Typical Steps

Steps are intended for use on minor embankments. Similar principles of design can be applied to more extended applications.

MATERIAL/ FINISH:

Treads: Class 1, F17 sawn finish recycled hardwood structural timbers (preferred). Alternative is treated timber with Copper Azole. All timber left unfinished.

Support frame: fully welded galvanised SHS tube.

NOTE: Overall width to suit pathway.

For details outlining the application/ use of balustrades refer PLE4.04 (Boardwalk Balustrade Details).

GRAVEL MULCH BENEATH STEPS. 100MM DEPTH ON WEED MAT.

MASS CONCRETE FOOTING PADS TO ENGINEERS REQUIREMENTS.

FOOTING DETAIL SHOULD RESPOND TO GROUND CONDITION WHICH MAY INCLUDE REMEDIATED SOIL.

WELDED TUBULAR STEEL SUPPORT FRAMES. GALVANISED FINISH.

50mm OVERHANG

TREADS MADE UP OF 50mm THICK TIMBER PLANKS.

100 X 5mm GALVANISED MILD STEEL EDGE STRIP FIXED TO SUPPORT FRAME TO RETAIN SOIL.

TREADS OVERHANG AT ENDS BY 100mm MIN.

MAX. RISE 150mm

250-300

DESIGN INTENT ONLY

PLE2
Typical Ramp

Ramps should conform to the requirements of AS1428.1-‘Design for Access and Mobility’ and the ‘Sydney Olympic Parklands Access Strategy’.

Ramp materials are to match the adjoining path type. Refer Paving section of PEDM for details of path materials.

Pathways and ramps should be designed to follow natural landform and have minor visual impact.

Ramps cut into ground and thereby requiring retaining walls should be avoided.

Ramps requiring earth fill and banks should be avoided.

Note: For details outlining the appropriate application of balustrades refer PLE4.04 (Boardwalk Balustrade Details).
Boardwalk Typical Section

Boardwalks are used in freshwater wetlands and in tidal mangrove areas.

MATERIALS:

Class 1, F17 sawn finish recycled hardwood structural timbers and decking (preferred). Alternative is treated timber with Copper Azole. All timber left unfinished. Galvanised mild steel structural steel elements. Galvanised bolts and other fixings.

Standard boardwalk - kerb only (PLE4.04).

Timber joists - secondary

Twin timber beams primary structure.

Timber posts - driven into foundation.

CROSS SECTION

Mather & Associates

LONG SECTION

(NOTE: KERB NOT SHOWN)

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

Design Guidelines
Boardwalks

**Wetlands**

Boardwalks will be used to cross water bodies and connect islands throughout wetlands areas. In freshwater wetlands boardwalks will be constructed low to the water to allow park users close access to the wetland vegetation and to make the boardwalks visually unobtrusive.

Boardwalks can be extended by the use of lookout platforms which will be placed at points of visual interest. These platforms may be placed directly alongside and at the same level as the boardwalk or away from and elevated above the boardwalk system. This elevated form of platform can be used for viewing the upper reaches of the mangrove foliage.

---

**Plan Forms**

- Bridge/Ramp Connections
- Elevated Platform: Takes users into canopy.
- Platform directly alongside boardwalk.
- Bridge: Platform (similar to PLE4.01)

**Design Intent Only**

PLE4.02
Platforms should be located at logical changes of direction and rest points which take advantage of viewing and interpretive opportunities.

Locations of seats and signage are shown as a guide only.

**PLATFORM AS NODE AT CHANGE OF DIRECTION**
(PLATFORMS CAN BE FORMED BETWEEN BOARDWALKS)

**PLATFORM AS EDGE**
(PLATFORMS CAN BE ATTACHED TO SIDES OF BOARDWALKS AT POINTS OF VISUAL INTEREST)
DESIGN INTENT ONLY
ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

Design Guidelines

Boardwalk Edge Details

Edge conditions may vary to suit viewing and interpretation opportunities, safety considerations and rest points.

NOTE: Kerb height to conform to requirements of AS 14281.1: ‘Design for Access and Mobility’.

Galvanised steel bracket supports for sign board fixed to boardwalk structure.

TYPICAL KERB

HEIGHT CAN VARY

INTERPRETIVE SIGN

200 x 50mm timber boards.

SEAT ON EDGE
FOR APPLICATIONS ON BOARDWALKS WHERE NO-HANDRAIL IS REQUIRED.

200 x 50mm timber boards.

SEAT ON BOARDWALK

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE4.05

Galvanised steel bracket support fixed to boardwalk structure.

Mather & Associates
Pedestrian Footbridge

Footbridges can be introduced at sections along paths where a balustrade is required; i.e. where the terrain becomes too rough or steep, or where a water course cuts across the path.

MATERIALS/ FINISHES:

Class 1, F17 sawn finish recycled hardwood decking and support structure.
Timber decking natural oil finish.
Galvanised mild steel structural steel elements.
Galvanised steel balustrading Stainless Steel wires with turnbuckles.

NOTES:
Refer PLE 5.02 for Balustrade details
Parking Elements Design Manual

Sydney Olympic Park Authority

July 2002

Revision

PLE5.02

Design Guidelines

Pedestrian Footbridge
Balustrade Details

Balustrade with infill
Open balustrade

NO BALUSTRADE
REFER PLE4.01
FOR BOARDWALK
DETAILS

OPEN BALUSTRADE

1000-1200mm
Balustrade (see below)

Balustrade with infill

BALUSTRADE CONDITIONS

VERTICAL BALUSTERS

BALUSTRADE HEIGHTS

ALL STRUCTURE TO BE VERIFIED BY
A STRUCTURAL ENGINEER

TYPICAL PLAN & SECTION 1:20
Clouston Associates

Design Intent Only

Sydney Olympic Park Authority

July 2002
Parklands Elements Design Manual
Pedestrian Footbridge Balustrade Details

Minor variations to balustrade details suit different applications and construction situations.

MATERIALS/ FINISHES:
- The taper cut TFB should be full depth butt weld to the PFC. The inside / visible face should be ground smooth
- Bolt fixings are M16
- Galvanising to be an Architectural finish for handrail sections and PFC. Visual defects such as dags, burrs, splotches, and pools are unacceptable
- Drain holes must be provided at the PFC handrail junction to drain the galvanising and avoid pooling at the corners
- On small handrail sections, bolt fixing can be replaced by two simple 20mm diameter rod butt welded

TYPICAL SECTIONS 1:20
Clouston Associates
Plan form of platform may vary to suit the situation. Seating may be provided as required.

Approach bridge extended as required.

MATERIALS/ FINISHES:

Class 1, F17 sawn finish recycled hardwood decking and support structure.

All timber left unfinished.

Galvanised mild steel structural steel elements.

Stainless steel balustrading wires with turnbuckles.
Platforms
Haslams Creek

Lookout platforms associated with pathways along Haslams Creek can take two different forms. Those constructed along the western edge of the creek are built over the gabion wall system and can extend further into the mangrove and will take the form of a bridge and deck. Those constructed along the eastern side will tend to be closer to the shore and can take a more organic free form.
Platforms/ Lookouts

Informal Lookouts

Lookout platforms can be situated along pathways to capitalise on vantage points. Where the terrain is steeply sloping, the platform can be constructed of timber. Design detailing similar to that used for boardwalk construction can be used.

Where the terrain is gently sloping, the platform can take the form of a grassed clearing defined by a timber edge strip. Both types of lookout should be free form in plan shape.

Hill top Lookouts

Lookouts on the tops of the remediated landforms and markers should be roughly oval in shape and should be treated as follows:

Markers: grass


ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE6.03
Formal Lookouts
- concrete / stone wall

MATERIAL/FINISH:
Random rubble (basalt) retaining wall. Exposed aggregate concrete paving.

COMMENTS:
Refer PP13a for washed concrete pavement detail.
Design Guidelines

Picnic Shelter

*Picnic shelters may be provided at various locations throughout the Parklands. Walls and roof edges can be varied to suit particular site applications.*

- Zincalume corrugated iron roof, gutter and downpipes. For roof edge variations see PLE7.07.
- Clear finish plywood ceiling.
- Galvanised steel roof support structure.
- Optional timber screen walls (see PLE7.06)
- Recycled sawn hardwood posts.
- Sawn control joint.
- Galvanised steel post supports.
- Reinforced concrete slab.

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE7.01
Picnic Shelter

Siting

Shelters should be sited along the edges of clearings designated as picnic zones. Shelters should be facing generally to the north where possible.

Shelters can be placed as isolated structure which can be used for individual groups or as associated structures which can be used for larger user groups.

EXAMPLES OF SITING
Picnic Shelter
Elevations/ Plan

THE TIMBER FLOOR ALTERNATIVE IS FOR EXCEPTIONAL APPLICATIONS ONLY. IT MAY BE USED WHERE THE SLOPE OF THE LAND REQUIRES A RAISED PLATFORM OR WHERE A SPECIAL FLOOR FINISH IS REQUIRED.

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE7.03
Picnic Shelter

MATERIALS:

DRAINAGE OPTIONS:
1. Pipe to nearest creek/ water-course or storm water drainage system.
2. Rainwater tank to be used in remote areas where water supply may be difficult.
3. Absorption trench in non-remediated gorund and where distance prevents piping as in 1.
Picnic Shelter

1. Zincalume corrugated iron
2. 75 x 38mm battens (shade shelter)
3. 12mm plywood ceiling
4. 125 x 75 x 6mm UA in pairs
5. 12 plate 2M16 bolts
6. 150 x 100 x 10mm UA
7. Halfround gutter 75 diam (optional)
8. 6 plate MS flat
9. 150 x 150mm timber post
10. Barge roll
11. Galvanised MS blade footing shoe fixed with M20 bolts (refer to detail).
13. Optional trench drain.

**SECTION 2**

**EXAMPLE OF SHALLOW FOOTING FOR USE IN REMEDIATED CONDITIONS.**

**SECTION 3**
Picnic Shelter Enclosing Walls

Enclosing walls may be introduced to provide shelter from wind or rain or privacy between shelters. Walls may also provide support and/or enclosure for elements such as telephones, notice boards, hot water units, rainwater tanks, drink dispenser units etc.

Possible Forms of Enclosing Walls

- **SOLID**
  - Wind Screen
  - Horizontal Weatherboards on Stud Framing
  - Width: 2000

- **SEMI TRANSPARENT**
  - Privacy Screen
  - Solid Horizontal Timber Sections Within Frame
  - Width: 50 x 100mm

- **SOLID SECURITY SCREEN**
  - Horizontal Weatherboards on Stud Framing
  - Form Articulated to Allow for Other Elements to Be Enclosed
  - E.g., Drink Machine, Telephones, Bubblers etc.

Possible Types of Enclosing Walls

- **SECTION - SOLID WALL**
- **PART WALL ELEV.**
- **SECTION - TRANSPARENT WALLS**

**ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER**

**PLE7.06**

Sydney Olympic Park Authority  Revision  July 2002  Parklands Elements Design Manual
Picnic Shelters
Roof Edges

Roof edges can be modified to introduce filtered light around the edge of the shelter where this is appropriate.

38 x 38mm TIMBER BATTENS

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

Design Guidelines
Design Guidelines

Picnic Shelters

Large formats

Standard form can be extended and adapted to provide a larger format to cater for large groups of people.

These units need to be designed as individual solutions to suit particular requirements.

Choice of materials and design of connections should be consistent with the standard design (see PLE7.01).

- Single length stainless steel box gutter enclosed with leaf guard.
- Plywood infil can transform framing into a truss system.
- Height should be increased relative to span.

NESTING

HEIGHT OF STRUCTURE SHOULD BE INCREASED IN PROPORTION TO THE EXTENSION OF THE GROUND COVERED.

GROUND LINE FOR STANDARD UNIT.

LARGE PURPOSE DESIGNED STRUCTURE

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE7.08
Design Guidelines

Parklands Shade Structure

These structures may be used in association with car park areas and other activity zones where permanent shade is required. These structures may be used in conjunction with bench seats.

- Timber battens below principal structure.
- Support structure as for picnic shelter.
- Paving as for picnic shelter.

MATERIALS:

- Class 1, F17 sawn finish recycled hardwood structural timbers. All timber left unfinished.
- Galvanised mild steel structural steel elements.
- 175 x 50mm timber purlins with 38 x 38mm timber cross battens on underside. Nominal centres to be as indicated on the section.
- Use similar steel support system as picnic shelter (PLE 7.05)
- Use same timber post system as picnic shelter. Posts at 3.5m centres.
- Galvanised steel plate connector (PLE7.05)
- Reinforced concrete footings (PLE7.05)

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE8
Barbeque

PRODUCT:
Moodie Carina BBQ enclosure: “AUSCAST” durable cast concrete

MATERIAL/FINISH:
- Precast concrete BBQ enclosure 1000 x 1000 x 900H
- Doors to be painted black

MANUFACTURERS DETAILS:
Moodie Marketing Australia
Unit 9, 33-37 College Street
Gladesville NSW 2111

Ph: (02) 9816 1133
Fax: (02) 9816 3417

COMMENTS:
Barbeque installation is usually located adjacent to picnic shelters. Two types - operable and non operable.

ELEVATION 1:50
Enclosure Wall Unit/Drinkstation

Enclosure wall units may be used to provide further functional extensions to a shelter which is associated with an area such as a car park, an activity node or in exposed or remote parts of the Parklands. It can be developed to provide for an extensive range of amenities.

Possible uses:
- Drink dispenser
- Hot water unit
- Telephones
- Minor storage
- Electrical switchboards
- Signage (interpretive)
- Signage (advertising)
- Bubbler

Wall unit can form part of picnic shelter enclosing wall system (PLE7.06)

Wall unit constructed from timber stud framing clad with weather boards.
Vehicle Gate

Vehicle gates are used where it is necessary to block access to vehicles only but not to foot traffic. This element may be used in conjunction with secondary elements such as PLE12- VEHICLE BARRIER.

MATERIALS/ FINISHES:

Stainless steel wire brace and pipe.
RSJ beam
150 diam. steel posts
Mass concrete footing

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

PLE11
Design Guidelines

Vehicle Barrier

Vehicle barriers are used where it is necessary to control vehicular parking and access adjacent to venues, facilities, planted areas and pathways throughout the Parklands.

MATERIALS/ FINISHES:

Class 1, F17 sawn finish recycled hardwood structural timbers (preferred). Alternative is treated timber with Copper Azol. All timber left unfinished.

Vehicle barriers are used where it is necessary to control vehicular parking and access adjacent to venues, facilities, planted areas and pathways throughout the Parklands.

MATERIALS/ FINISHES:

Class 1, F17 sawn finish recycled hardwood structural timbers (preferred). Alternative is treated timber with Copper Azol. All timber left unfinished.

Vehicle barriers are used where it is necessary to control vehicular parking and access adjacent to venues, facilities, planted areas and pathways throughout the Parklands.

MATERIALS/ FINISHES:

Class 1, F17 sawn finish recycled hardwood structural timbers (preferred). Alternative is treated timber with Copper Azol. All timber left unfinished.

Vehicle barriers are used where it is necessary to control vehicular parking and access adjacent to venues, facilities, planted areas and pathways throughout the Parklands.

MATERIALS/ FINISHES:

Class 1, F17 sawn finish recycled hardwood structural timbers (preferred). Alternative is treated timber with Copper Azol. All timber left unfinished.
Design Guidelines

Bird Hide
PLE13

TO BE CONFIRMED
Design Guidelines

Shade Structures

PRODUCT:
Free standing tension membrane shade structure.

CATALOGUE No: Casablanca

MATERIAL/FINISH:
Coen weave architectural mesh. Support structure - m/steel hot dip galvanised

COMMENTS:
- Wind rated collapsible, conical tension membrane structure.
- Supports: inground or above ground to be detailed by structural engineer.

MANUFACTURER:
Shade Structures Birdair Pty Ltd
7/198 Young Street
Waterloo, NSW 2017

Ph: (02) 9699 8933
Fax: (02) 9419 8251

Collapsible Square

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Permanent Square & Rectangular

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<td>PAVING</td>
<td>Typical Insitu Kerb</td>
<td>Typical detail for access roads or car park areas Reduced dimensions to suit scale.</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>P5</td>
<td>Typical Insitu Swale</td>
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<td>UEDM</td>
<td>Oct. 2001</td>
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<td>PP6</td>
<td>Typical Insitu Flush Kerb</td>
<td>UEDM adapted-500 width. Reduced dimensions to suit park scale.</td>
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<td>PP8a+b</td>
<td>Typical Planted Swales</td>
<td>Turf or native options</td>
<td>PEDM</td>
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<td>P11</td>
<td>Typical Decomposed Granite</td>
<td>Permeable pavement for special use areas ie, RANAD precinct.</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>PP13a</td>
<td>Washed Concrete Pavement</td>
<td>Pathway junctions and nodes</td>
<td>PEDM</td>
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<tr>
<td>PP13b</td>
<td>Washed Concrete Pavement – Joint Details</td>
<td>Pathway junctions and nodes</td>
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<td>July 2002</td>
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<td>P15</td>
<td>Typical Kerb Ramp</td>
<td>To signal hazard</td>
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<td>P16</td>
<td>Typical Vehicle Crossover - Asphalt</td>
<td>To signal vehicle crossovers at the kerb</td>
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<td>PP17</td>
<td>Typical Hazard Tactiles</td>
<td>To be used only when there is a potential conflict between pedestrians and vehicles</td>
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<td>P22</td>
<td>Typical AC Edge</td>
<td>Minimal finishing edge to AC pavement</td>
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<td>PP23</td>
<td>Typical Timber Edge</td>
<td>Flush edge to grass or planting</td>
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<td>P26</td>
<td>Typical Service Cover - General</td>
<td>Minimise impact of service covers &amp; ensure integration with surrounding pavements. Details for &lt;600mm</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>PP36</td>
<td>Leaf Litter Pavement</td>
<td>Tertiary paths, for low use trails, ie Newington Woodlands</td>
<td>PEDM</td>
<td>July 2002</td>
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**Approach to Paving**

- UEDM paving elements available if required.
- Hierarchy of paving materials to respond to site wide definition of degrees of accessibility & profile
- Emphasis on environmental sustainability
- Maximise permeability
- Minimise run-off
- Simple unobtrusive approach
**Typical Insitu Kerb and Gutter-Preferred Size**

**Material:**
- insitu concrete kerb and gutter, jointing 1200mm nominal (to match RTA SA kerb type)

**Composition:**
- strength - 40MPa
- standard concrete mix to match approved sample

**Finish:**
- standard concrete finish

**Construction:**
- to engineers final specification

Note: Provide 30% luminance contrast between pavers and kerb zone.

---

**Design Guidelines**

**Typical Section 1:20**

**Typical Plan 1:20**
Design Guidelines

Typical Insitu Swale

Material:
- insitu concrete swale equal to RTA SB type

Composition:
- strength - 40MPa
- standard concrete mix

Finish:
- standard concrete finish

Construction:
- to engineers final specification

Note: Provide 30% luminance contrast between pavements and swale.

TYPICAL PLAN 1:20
NOTE: IF BOLLARDS ARE NOT REQUIRED, THE TACTILE PAVER STRIP CAN BE REDUCED TO 600MM IN ACCORDANCE WITH THE SOPA ACCESS GUIDELINES.
Typical Insitu Flush Kerb

**MATERIAL:**
- insitu concrete 500mm width flush kerb, joining 1200mm nominal

**COMPOSITION:**
- strength: 40MPa
- standard concrete mix

**FINISH:**
- standard concrete finish

**CONSTRUCTION:**
- to engineers final specification

**NOTE:**
- Provide 30% luminance contrast between pavements and flush kerbs
Design Guidelines

Typical Planted Swales

PP8a - NATIVE GRASS SWALE
- Sides of swale to be no steeper than 1:3
- Native grass to be planted at 16 plants per square metre

PP8b - REINFORCED TURF SWALE:
- sides of swale to be no steeper than 1:3
- reinforced turf to be “Cling” turf or equivalent
- Turf grown into a strong permanent UV stabilised mesh, that hold the turf together and helps it cling to the ground
- Can handle a water velocity of 4.5m per second

NOTE:
PP8a = Native Grasses
PP8b = Reinforced Turf
**Design Guidelines**

**Typical Decomposed Granite**

Material:
- pink decomposed granite on cement stabilised consolidated FCR

Composition:
- to engineers final specification

Note: Should not be used as a paving material within the continuous accessible paths of travel.

TYPICAL SECTION 1:5

Diagram showing 100mm decomposed granite on cement stabilised consolidated FCR with a 2% max. grade.
Typical Asphaltic Concrete - Standard

Material:
- 30mm depth AC 10 wearing course

Composition:
- standard mix with standard gravel (blue metal) to engineers final detail

Construction:
- to engineers final specification
**Washed Concrete Pavement**

**MATERIAL:**
- Insitu concrete pavement

**COMPOSITION:**
- To comply with AS1379
- Strength: 20Mpa at 28 days (unless otherwise shown)
- Minimum effective cement content: 280kg/m³
- Minimum air content: 4.5%
- Maximum slump: 80mm
- Aggregate: 100% Nepean gravel, 20mm

**FINISH:**
- Surface finish: light washed exposed aggregate

**CONSTRUCTION**
- To engineers final specification

**NOTE:**
Concrete paving to be used for all nodes and junctions in parklands

---

**TYPICAL PLAN - PATH / NODE JUNCTION**

**TYPICAL JOINT SETOUT**
Clouston Associates
DESIGN INTENT ONLY

TYPICAL JOINT DETAILS

Clouston Associates

Sydney Olympic Park Authority    Revision July 2002    Parklands Elements Design Manual
Tactile Pavers:
Location:
- 300x300x80mm depth hazard tactile pavers in a 600mm strip in all kerb crossings

Material:
- precast concrete unit pavers 300x300x80mm depth, 30% luminance contrast to surrounding pavements

Composition:
- to match approved sample

Finish:
- standard concrete broom finish in charcoal colour in hazard pattern to meet AS 1428.4-1992: Type B indicators

Construction:
- to engineers final specification

Note: Refer to SOPA’s Access Strategies for tactile paving requirements. Refer to PP17 for manufacturers details for tactile pavers.
Typical Hazard Tactiles

Tactile Pavers:
Location:
- 1800mmx600mm strip of hazard tactile pavers

Material:
- precast concrete pavers 300x300x80mm depth, 30% luminance contrast to surrounding pavements

Composition:
- to match approved sample

Finish:
- standard concrete finish in charcoal colour in hazard tactile pattern to meet AS 1428.4-1992: Type B Indicators

Construction:
- to engineers final specification

MANUFACTURER’S DETAILS:
Boral Masonry
Clunies Ross Street
Prospect NSW 2148

Ph: (02) 9840 2333
Fax: (02) 9840 2344

Note:
1. Refer to SOPA’s Access Strategies for tactile paver requirements
2. Hazard Tactile pavers to be used only where there is a potential conflict between pedestrians and vehicles, ie. bus stops, car parks and access roads.
Typical Tree Surround - Square Steel Edge

Material:
• mild steel angle bracket

Finish:
• galvanised

Construction:
• secure to concrete haunch using 5mm diameter 500mm length galvanised mild steel rod at 500 centres

Note: Gravel mulch should not be used within the continuous accessible path of travel
**Typical AC Edge**

**Material:**
- 100x5mm mild steel edge

**Finish:**
- galvanised

**Construction:**
- lap join edge strips 150mm
- peg every 2000 mm centres
  - both sides using 10mm diameter, 200mm nominal length galvanised mild steel pegs

**Access Note:** Grass should not be used within the continuous accessible path of travel
**Typical Timber Edge**

**PRODUCT:**
- Hardware timber edge

**MATERIAL/FINISH:**
- Sawn, sustainably managed regrowth, durability Class 1, seasoned hardwood to Table F2, AS1604.

**COMMENTS:**
- 2400 x 150 x 38 nominal edgings, 50mm square pegs, 450mm long
- Edgings flush with adjoining surfaces
- Fix to pegs using two galvanised per fixing at 1200mm centres on planting side of edging
- Where timber is to be curved, space the pegs to hold it to a uniform curve.
Typical Sump Grate

Material:
- 600mm maximum cast iron sump grate and frame with perforations maximum 13mm width and 150mm length to meet AS 1428.4

Finish:
- finish grate and frame flush with adjacent pavement
- do not expose concrete surround

Construction:
- to landscape architects final detail
Design Guidelines

Typical Service Cover - General

- Service covers less than 600mm shape to be cast iron
- Service covers greater than 600mm to be infilled with material to match the surrounding pavement

CAST IRON
(LESS THAN 600MM)

INCREASER RISERS
FOR UNIT PAVING

CAST IRON
LID

CAST IRON
COVER & FRAME

INFILLED
(GREATER THAN 600MM)

MAINTAIN PAVEMENT PATTERN & TYPE

INFILL LID

MATERIAL TO MATCH THE SURROUNDING PAVEMENT

INFILL COVER

STANDARD INFILL COVER AND FRAME

SET DOWN HAUNCH TO ALLOW ADJACENT PAVEMENT TO BUTT

CAST IRON COVER

STANDARD CAST IRON COVER & FRAME

SET DOWN HAUNCH

ADJACENT PAVEMENT TO BUTT
Leaf Litter Pavement

MATERIAL:
- to consist of predominantly native species
- to contain no viable weed seed
- to contain no noxious plants which have the potential to re-grow, ie. bamboo, camphor laurel, etc

COMPOSITION:
- to engineers final specification

NOTE:
- should not be used as a paving material within the continuous accessible paths of travel
- to be used for low use trails ie. Newington Woodlands.
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<td>PEDM</td>
<td>July 2002</td>
</tr>
<tr>
<td>PSF05a</td>
<td>Parklands Bench</td>
<td>UEDM SF05a - Table Seat 900mm adapted</td>
<td>PEDM</td>
<td>July 2002</td>
</tr>
<tr>
<td>PSF06</td>
<td>Waterfront Bench</td>
<td>Recycled timber baulk, for use in foreshore areas</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PSF08</td>
<td>Picnic Set</td>
<td>For use in &amp; around picnic shelters, wall mounted or freestanding</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>SF10</td>
<td>Bubbler – Building Mounted</td>
<td>Mounted on building wall / Wheelchair accessible</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>PSF11</td>
<td>Bubbler – Freestanding</td>
<td>Where Required</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>PSF15</td>
<td>Park Bollard - Removable &amp; Fixed</td>
<td>Where required</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>SF21</td>
<td>Bin Mount - Perpendicular</td>
<td>For use around catering sites/car parks. Contingent on operational</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF22</td>
<td>Bin Mount - Parallel</td>
<td>For use around catering sites/car parks. Contingent on operational</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF24a</td>
<td>Bin Station - Temporary</td>
<td>Using 240L bins, custom designed pictograms, visible recycling station to facilitate waste management. Contingent on operational requirements</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF25</td>
<td>Bike Rack - Free Standing</td>
<td>Simple, robust rack for short term, secure storage; in car parks, &amp;</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF28</td>
<td>Phone - Wall Mounted</td>
<td>Standard Telstra telephone – Majestic booth for single or multiple installation</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF35</td>
<td>Standpipe &amp; Housing</td>
<td>Protection for standpipe</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>PSF38a</td>
<td>Permanent Frog Fence</td>
<td>Refer to SOPA Frog Management Plan for location principles</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>PSF38b</td>
<td>Permanent Frog Fence</td>
<td>Refer to SOPA Frog Management Plan for location principles</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>PSF38c</td>
<td>Permanent Frog Fence</td>
<td>Refer to SOPA Frog Management Plan for location principles</td>
<td>PEDM</td>
<td>July 2002</td>
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</table>
## Approach to Parklands Furniture

- Selected range of seating
- Selected fences to respond to profile & purpose. Palisade fence to be used in high profile landscape areas only. The chainmesh fence is an alternative for use on boundaries of low exposure areas where a low cost solution is required.
- Minimise scattered furniture in the Parklands, groupings are preferred
- Maximise potential of design to fulfil requirements
- Unobtrusive, simple, functional designs
- Bubblers, telephones, & flagpoles only associated with buildings
- Minimise amount of fencing through educative approaches to control of access, principle of planted boundaries rather than fences wherever possible
- Access restriction associated with buildings to be designed as a component of architecture, in lieu of extra security fencing
- Trade names to be discretely placed and approved on Parklands Furniture Elements

<table>
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<tr>
<th>Ref</th>
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<td>Chainmesh Fence</td>
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<td>PSF41</td>
<td>Flagpole</td>
<td>As installed at Homebush Bay Ferry Terminal</td>
<td>PEDM</td>
<td>July 2002</td>
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<tr>
<td>SF42a</td>
<td>Typical Fencing - Palisade</td>
<td>UEDM fence provides design intent. Detail design for specific applications in high profile landscapes only</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<tr>
<td>SF42b</td>
<td>Typical Fencing - Palisade</td>
<td>Photographic illustrations</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>SF43</td>
<td>Typical Gate - Palisade</td>
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<td>PEDM</td>
<td>July 2002</td>
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<td>SF44</td>
<td>Replica Heritage Fence</td>
<td>To be confirmed</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>SF45</td>
<td>Café Chairs</td>
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<td>June 2002</td>
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<td>SF46</td>
<td>Café Tables</td>
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<td>June 2002</td>
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<tr>
<td>SF47</td>
<td>Café/Market Umbrellas</td>
<td></td>
<td>UEDM</td>
<td>June 2002</td>
</tr>
</tbody>
</table>
Design Guidelines

Parklands Seat

PRODUCT:
Free-standing Seat with Armrests

MATERIAL/FINISH:
- cast aluminium frame and armrests; cast surface with minimum wire brush
- timber planking: recycled hardwood timber
- timber finish: clear oil finish
- fixings: stainless steel tamper proof

COMMENTS:
PSF02a - surface mount
PSF02b - inground mount

MANUFACTURER’S DETAILS:
Street & Garden Furniture Co
27 Rogers Street
West End
OLD 4101

Contact:
Ph: (07) 3844 1951
Fax: (07) 3844 9337
Design Guidelines

Parklands Table Seat (1800)

PRODUCT:
Table Seat

MATERIAL/FINISH:
- cast aluminium frame; cast surface with minimum wire brush
- timber planking: recycled hard-wood timber
- timber finish: clear oil finish
- fixings: stainless steel tamper proof

COMMENTS:
surface mount

MANUFACTURER’S DETAILS:
Street & Garden Furniture Co
27 Rogers Street
West End
OLD 4101

Contact:
Ph: (07) 3844 1951
Fax: (07) 3844 9337

Sydney Olympic Park Authority
Revision July 2002
Parklands Elements Design Manual

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY

PSF05
Parklands Bench

PRODUCT:
900mm wide Bench Seat

MATERIAL/FINISH:
- cast aluminium frame; cast surface with minimum wire brush
- timber planking: recycled hardwood timber
- timber finish: clear oil finish
- fixings: stainless steel tamper proof

COMMENTS:
Inground mount

MANUFACTURER’S DETAILS:
Street & Garden Furniture Co
27 Rogers Street
West End
OLD 4101

Contact:
Ph: (07) 3844 1951
Fax: (07) 3844 9337
Design Guidelines

Waterfront Bench

PRODUCT:
Recycled hardwood timber baulk

MATERIAL/FINISH:
clear oil finish

COMMENTS:
to be used as seating / edge along the Foreshore Walk - Paramatta River and Homebush Bay

PSF06

All structure to be verified by a structural engineer.

Design Intent Only
Design Guidelines

Picnic Set

MATERIAL/FINISH:
Frame:
- Mild steel frame with minimum wire brush finish
Timber:
- Timber planking to be recycled hardwood with clear oil finish

MANUFACTURER’S DETAILS:
Street & Garden Furniture Co
27 Rogers Street
West End
QLD 4101

Contact:
Ph: (07) 3844 1951
Fax: (07) 3844 933

COMMENTS:
Wheelchair accessible.
Bubbler
- Wall Mounted

PRODUCT:
Bubbler - Wall mounted

MATERIALS/FINISH:
Stainless Steel Bubbler.
Stainless Steel grate.

COMMENTS:
Mounted on building wall.
Wheelchair accessible

SUPPLIER:
Supplied by Sydney Water

PLAN

FRONT ELEVATION  SIDE ELEVATION

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY

(UEDM DETAIL)

SF10
Bubbler - Freestanding

PRODUCT:
Bubbler - Freestanding

MATERIAL/FINISH
S/steel bowl, outlet and mounting arm. Automatic push button valve.
Outlet finish - Satin.
Powdercoated m/steel tapered pedestal

SUPPLIER: bubbler supplied by Sydney Water

MANUFACTURER’S DETAILS:
Commercial Systems Australia
15-17 Molan St
RINGWOOD VIC 3134

Ph: (03) 9879 4999
Fax: (03) 9879 4966

Contact: Gavan Costelloe

COMMENTS:
Wheelchair accessible. Surface mount at ground level. Re-ordering 3 week without inventory.

Catalogue No: OE 5001
Park Bollard

PRODUCT:
Fixed or removable Bollard - available in Removable & Locking, Fixed Insitu and Fixed Baseplate.

MATERIALS/FINISH:
Polished aluminium bollard 150NB(165.1) x 5 mm aluminium pipe. Collar: Yellow reflective tape

MANUFACTURER’S DETAILS:
LEDA Security Products Pty Ltd
3-7 Highgate Street
Auburn NSW 2144

Ph: (02) 9737 8730
Fax: (02) 9737 8731

Contact: Joseph Pizzolato

Catalogue No:
AE151R (removable)
AE151F (fixed)
Bin Mount - Perpendicular

PRODUCT:
240 Litre Bin Wall Mount
Fixed to existing walls

MATERIALS/FINISH:
Bin security clamp hot-dip galvanised m/steel

COMMENTS:
Suits all size bins.
Key locked.

MANUFACTURER’S DETAILS:
Street Furniture Australia
92-94 Buckland Street
Alexandria NSW 2015

Ph: (02) 9310 1488
Fax: (02) 9318 1343

SIDE ELEVATION
FRONT ELEVATION

350
250
1200
Bin Mount - Parallel

PRODUCT:
Bin Wall Mount Parallel
Fixed to existing walls.

MATERIALS/FINISH:
Mild Steel hot-dip galvanised.
Features universal keyed security lock.

COMMENTS:
Suit both 240 & 175 litre.
Available in double and triple units.

MANUFACTURER’S DETAILS:
Street Furniture Australia
92-94 Buckland Street
Alexandria NSW 2015

Ph: (02) 9310 1488
Fax: (02) 9318 1343
Bin Mount - Temporary

PRODUCT:
Temporary Bin Station

MATERIALS/FINISH:
Mild Steel hot-dip galvanised. Backing Plates - powdercoated in Anzol Charcoal Metallic. Pictogram panels - refer S3

COMMENTS:
Utilises catalogue item 240 litre bins. Colour coded dark blue, maroon, grey. Provide hold-down bolts to provide structural stability when freestanding

MANUFACTURER’S DETAILS:
Frame & Bin Locking Arm:
Street Furniture Australia
92-94 Buckland Street
Alexandria NSW 2015
Ph: (02) 9310 1488
Fax: (02) 9318 1343

Pictograms:
Artcraft
13 Kumulla Road
Miranda NSW 2228
Ph: (02) 9525 7788
Fax: (02) 9526 2285

Bins:
Sulo MGB Australia Pty Ltd
123 Wisemans Ferry Road
Somersby NSW 2250
Ph: (02) 4348 8488
Fax: (02) 4348 8123

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY
**Design Guidelines**

---

**Bike Rack - Freestanding**

**PRODUCT:**
Freestanding Bike Rack

**MATERIALS/FINISH:**
Mild Steel hot-dip galvanised.

**COMMENTS:**
Layout of bike racks to comply with AS2890 - 1993

**MANUFACTURER’S DETAILS:**
Leda Security Products
3-7 Highgate Street
Auburn NSW 2144

Ph: (02) 9737 8730
Fax: (02) 9737 8731

Contact: Joseph Pizzolato

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**SIDE VIEW**

---

**PLAN VIEW**

---

**FRONT VIEW**

---

**SIDE VIEW**

---
Phone
- Wall Mounted

PRODUCT:
Phone Wall Mounted

MATERIALS/FINISH:
Telstra majestic booth custom finished.

COMMENTS:
Wheelchair accessible.
Telstra install, own and operate this phone system.
Coin and/or Card option

MANUFACTURER’S DETAILS:
Telstra
Level 25, 320 Pitt Street
Sydney NSW 2000

Ph: (02) 9423 5258
Fax: (02) 9423 5466
Standpipe and Housing

PRODUCT:
Assembled Standpipe and Housing

MATERIALS/FINISH:
Mild Steel “U” section
150 x 200mm hot dip galvanised.
Stainless steel fixings - tamper proof

COMMENTS:
Inground mounted
Permanent Frog Fence

PRODUCT:
1200mm high wire ringlock fencing with shade-cloth cover.

MATERIALS/FINISH:

Strainer posts: 60mm OD galv pipe set in concrete footing, braced by 42mm OD galv. pipe diagonal stays set into concrete footings. Post to be capped with galv. steel cap fitting.

Strainer post footings: 20MPa concrete, 225mm diameter x min 800mm deep.

Start pickets: 1800mm long black steel star pickets at max. 3000mm centres.

Fencing wire: 2.8mm galv. high tensile fencing wire.

Ringlock fencing: Ringlock steel mesh fencing with 300mm wide openings.

Shade cloth: 75-80% density black shade cloth - equal or similar to Hortshade Heavy Knitted Shade Cloth.

COMMENTS:
Refer Appendix C for Frog Fence specification.

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY
Design Guidelines

Permanent Frog Fence

TYPICAL DETAIL OF STRAINER POSTS & BETWEEN POSTS

TYPICAL VEHICULAR GATE
Pittendrigh Shinkfield & Bruce

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY
Design Guidelines

Permanent Frog Fence

Frog Fence Attached to Security Fence - Section & Plan

Frog Fence Attached to Security Fence - Elevation

Pittendrigh Shinkfield & Bruce

Design Intent Only

All structure to be verified by a structural engineer

PSF38c
Chainmesh Fence

PRODUCT:
1800-2100mm high galvanised chain mesh fence

COMMENTS:
- Fence can be used with or without barbed wire, depending on situation.
- To be used on boundaries of low exposure areas where a low cost solution is needed.
PRODUCT:
Cast alluminium flagpole

MATERIALS/FINISH:
White Powder coated aluminium, tapered spun aluminium finial

COMMENTS:
To be used for marking major entry points, as at Homebush Bay Ferry Warf and Australia International Archery Park.

MANUFACTURER’S DETAILS:
Flagpole World
42 Edwin Street
Mortlake MSW 2137
Ph: (02) 9743 1111
Fax: (02) 97435821
Typical Fencing - Palisade

PRODUCT: Assembled Palisade Fencing

MATERIALS/FINISH: Mild Steel hot dip galvanised

COMMENTS: Assembled from readily available simple components. To comply with BCA requirements.

PLACEMENT: Refer to OCA Fencing Strategy
Typical Fencing
- Palisade

Photographic illustrations - Homebush Bay Ferry Warf
Design Guidelines

Typical Gate - Palisade

1/2 Gate & Column - Elevation

Lower Support Double Flange - Plan

Mather & Associates

All structure to be verified by a structural engineer.
Replica Heritage Fence

LOCATION:
To be installed in R.A.N.A.D. Precinct of Parklands.

PRODUCTS:

MANUFACTURER’S DETAILS

COMMENTS:

TO BE CONFIRMED

DESIGN INTENT ONLY

PSF44
Cafe chairs

PRODUCT:
Cafe tables

MATERIAL/FINISH:
Polished aluminium as per manufacturer’s specification.

Aluminium slats

Commercial quality
Stackable
Polished aluminium frame and slats

Timber slats

Commercial quality
Stackable
Polished aluminium frame with timber slats

MANUFACTURER’S DETAILS
Emerdyn Pty Ltd
24 Wiggs Road
Riverwood NSW 2210
Ph: (02) 9534 1314
Fax: (02) 9534 5298
### Cafe tables
#### aluminium and timber

**PRODUCT:**
Cafe Tables

**MATERIAL/FINISH:**
Polished aluminium frame as per manufacturer’s specification with aluminium or timber top

**Square**
Polished aluminium top sizes:
- AF-460A  600 x 600 x 700h
- AF-470A  700 x 700 x 700h
- AF-480A  800 x 800 x 700h

**Timber Top**
Similar or equal to Emerdyn AF-703
- size: 600 x 600 x 700h

**Commercial quality**
- polished aluminium
- rolled aluminium edges
- hardwood timber slats
- sturdy cast aluminium base

**Round**
Polished aluminium top sizes
- AF-460  600dia x 700h
- AF-470  700dia x 700h
- AF-480  800dia x 700h

**Commercial quality**
- polished aluminium
- rolled aluminium edges
- sturdy cast aluminium base

**MANUFACTURER’S DETAILS**
Emerdyn Pty Ltd
24 Wiggs Road
Riverwood NSW 2210
Ph: (02) 9534 1314
Fax: (02) 9534 5298

---

**ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER**

**DESIGN INTENT ONLY**

SF46
Design Guidelines

Cafe / Market umbrellas

PRODUCT:
Australian made
Classic Market Umbrella

MATERIAL/FINISH:
Australian hardwood frame
Non fading acrylic material
Cast iron bases
Brass fittings

COMMENTS:
Two sizes to be used
Padua - medium
Portofino - large

Material colour to be used:
Black
Natural

Flat steel base to be used:
Charcoal

MANUFACTURER’S DETAILS:
Shelta Australia
187 Parramatta Road
Homebush NSW 2140

Ph: (02) 9763 1166
Fax: (02) 9746 7483

ALL STRUCTURE TO BE VERIFIED BY
A STRUCTURAL ENGINEER

DESIGN INTENT ONLY

SF47
### Approach to Lighting

- Highlighting of landscape/built elements, eg. heritage buildings, to be architecturally lit rather than post-top lit
- Taperline series from UEDM provides off the shelf elements
- Special design solar pedestrian light
- Emphasis on environmental aspects of lighting
- Minimise post-top light
- Principle of careful selection of areas and paths to be lit
- Refer Appendix E for Lighting types proposed for Parklands areas

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<th>Document</th>
<th>Revision</th>
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<td>Parklands Solar Light</td>
<td>Option available</td>
<td>PEDM</td>
<td>July 2002</td>
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<td>Option 1</td>
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<td>Option 2</td>
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<td>L8c</td>
<td>12m pole light</td>
<td>Taperline series as in UEDM - associated with sports fields</td>
<td>UEDM APPX1</td>
<td>Oct. 2001</td>
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<td>L8d</td>
<td>7m pole light</td>
<td>Taperline series as per UEDM</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>Lf</td>
<td>Luminaires</td>
<td>For use on light poles (see Design Guidelines; Lighting)</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>Lg</td>
<td>Uplight</td>
<td>Inground uplight</td>
<td>UEDM</td>
<td>Oct. 2001</td>
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<td>L1</td>
<td>Uplight</td>
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<td>Oct. 2001</td>
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<td>Recessed wall light</td>
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<td>UEDM</td>
<td>Oct. 2001</td>
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Design Guidelines

Parklands Solar Light - Option 1

LUMINARE: Kim-Sar
FINISH: Grey
LAMP: TE 26 Watt
COLOUR: 21

PANEL: Premium 75 Watt
FINISH: Wire Brushing

BATTERY: 120 AH/12 Volts
BATTERY AUTONOMY: 7 Days
OPERATION: 5.5 Hours

MANUFACTURER’S DETAILS:
SolarG
32 Woodfield Blvd
Taren Point NSW 2229

Contact: Kim Krysyna
Ph: (02) 9540 4553
Fax: (02) 9540 4322

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY

PL3a
Design Guidelines

Parklands Solar Light - Option 2
Currently located at the Ferry Wharf of Sydney Olympic Park

LUMINARE: Sorrento

POLE: 5.5 metre, 2 piece pole, charcoal grey powder coat finish

LAMP: DL 24watt

SOLAR PANELS: 75 watt panel in premium frame

OPERATION TIME: 4 hours

BATTERY: 120 AH/12 Volts
BATTERY AUTONOMY: 7 Days
OPERATION: 5.5 Hours

MANUFACTURER’S DETAILS:
SolarG
32 Woodfield Blvd
Taren Point NSW 2229

Contact: Kim Krysyna
Ph: (02) 9540 4553
Fax: (02) 9540 4322

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY

PL3b
**Design Guidelines**

**Tapered Light Pole Type 8c**

- **162 x 66mm plate**

**Round tapered pole**
- 247mm diam. at base
- 66mm diam. at top

**Access panel**

**ELEVATION 1:100**

**PLAN 1:100**

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

UEDM DETAIL

**L8c**
Design Guidelines

Tapered Light Pole Type 8d

118 x 55mm plate

Round tapered pole
148mm diam. at base
60mm diam. at top

Access panel

Round tapered pole
148mm diam. at base
60mm diam. at top

ELEVATION 1:100

PLAN 1:100
Design Guidelines

Luminare type f

DESCRIPTION: Coach Parking Luminaire
(Originally tendered as Luminaire 7B)

AGENT: Pulvin Composite Pty Ltd

MANUFACTURER: Rexel Australia

MODEL: SAR Archetype

LAMP: 150W CDMT 3000 K 83 CRI
Philips Metal Halide Ceramic Arc Tube

LIGHT DISTRIBUTION: Type 2: Side Throw
Type 4: Forward Throw

CONTROL GEAR: Integral

FINISH: Clear glass lens
Grey

DIMENSIONS: Height: 152 mm
Length: 435 mm
Width: 304 mm

APPLICATION: Pole Type 8C

AIMING: Glass face down
Orient as specified

REMARKS: IP 65

SUPPLIER’S DETAILS:
Pulvin Composite Pty Ltd
Unit 18, 43 to 45 College St
Gladesville NSW 2111

Ph: (02) 9879 3699
Fax: (02) 9879 3688
Contact: Stephen Warjabedian

MANUFACTURER’S DETAILS:
Rexel Australia
Unit 1, 56-60 Parramatta Road
Lidcombe NSW 2144

Ph: (02) 9648 6994
Fax: (02) 9648 6993

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER

DESIGN INTENT ONLY

(UEDM DETAIL)
Luminare type g

DESCRIPTION: Car Park Floodlight  
(Originally tendered as Luminaire 7A)  
AGENT: Pulvin Composite Pty Ltd  
MANUFACTURER: Rexel Australia  
MODEL: AR Archetype  
LAMP: 400W MS 400/HOR/T15/3K 3200 K 70 CRI  
Venture Metal Halide  
LIGHT DISTRIBUTION: Type 4 forward throw  
CONTROL GEAR: Integral  
FINISH: Grey  
DIMENSIONS: Length: 572 mm  
Width: 406 mm  
Height: 203 mm  
APPLICATION: Pole Type 8C  
AIMING: Glass face down  
Orient as specified  
REMARKS: IP65  

SUPPLIER'S DETAILS:  
Pulvin Composite Pty Ltd  
Unit 18, 43 to 45 College St  
Gladesville NSW 2111  
Ph: (02) 9879 3699  
Fax: (02) 9879 3688  
Contact: Stephen Warjabedian  

MANUFACTURER'S DETAILS:  
Rexel Australia  
Unit 1, 56-60 Parramatta Road  
Lidcombe NSW 2144  
Ph: (02) 9648 6994  
Fax: (02) 9648 6993  

ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER  

DESIGN INTENT ONLY  
(UEDM DETAIL)
## Design Guidelines

**DESCRIPTION:** In ground up light  
(Originally described as Luminaire 8F)

**AGENT:** WE-EF  
**MANUFACTURER:** WE-EF  
**MODEL:** ETC300-T

**ACCESSORIES:** Internal glare louvre blades  
Installation polyethylene blockout

**LAMP:**  
35W CDMT 3000 K 81 CRI  
70W CDMT 3000 K 83 CRI  
Philips Metal Halide Ceramic Arc Tube

**LIGHT DISTRIBUTION:** Symmetrical Wide Beam  
Narrow, Linear Spread, Asymmetrical Options

**CONTROL GEAR:** Integral

**FINISH:** Stainless steel flat top plate for use in paved areas, clear glass

**DIMENSIONS:** Diameter: 300 mm  
Recess Depth: 315 mm

**APPLICATION:** In ground

**AIMING:** Vertical

**REMARKS:** IP67

---

**AGENTS DETAILS:**

WE-EF Lighting  
Unit 6, 13 Downard Street  
Braeside Vic 3195

Ph: (03) 9580 5933  
Fax: (03) 9580 8316
**Luminare type n**

**DESCRIPTION:** Step light flush recessed  
(Originally described as Step Luminaire)

**AGENT:** Eagle Lighting NSW Pty Ltd

**MANUFACTURER:** Bega

**MODEL:** 2197

**LAMP:** 11W TC 3000 K 85 CRI  
Compact fluorescent triphosphor

**CONTROL GEAR:** Integral low loss ballast

**FINISH:** Black with louvre

**DIMENSIONS:**  
Length A: 320 mm  
Height B: 70 mm  
Recess Depth E: 70 mm

**MOUNTING DETAIL:** Full flush to Architects’ detail

**REMARKS:** IP54

---

**AGENTS DETAILS:**

Eagle Lighting Pty Ltd  
Unit 4, 21 Mars Road  
Lane Cove NSW 2066

Ph: (02) 9420 5799  
Fax: (02) 9420 5988

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**ALL STRUCTURE TO BE VERIFIED BY A STRUCTURAL ENGINEER**

**DESIGN INTENT ONLY**
Sydney Olympic Park is also a showcase for award-winning Australian water recycling technology. The Water Reclamation and Management Scheme (WRAMS) at Sydney Olympic Park saves each year an estimated 850 million litres of Sydney's drinking water, the equivalent of more than 250 Olympic swimming pools through the use of recycled stormwater and wastewater. WRAMS reduces our demand on Sydney's drinking water by 50% and reduces our discharge of sewage into the ocean by 90%. Recycled water is clear and odorless after cleansing and treatment processes, just like drinking water from the mains supply and will be used where drinking water quality is not required, such as irrigation for public landscapes and home gardens, toilet flushing, fire fighting and washing cars. WRAMS is complemented by other water-saving initiatives at Sydney Olympic Park, such as rainwater collection systems at Stadium Australia and the main arena of Sydney Showground. Sydney Olympic Park is planted with local Australian native plants that require very little extra water.

If you would like to know more about Millennium Parklands or WRAMS and other environmental works remember to visit our website on www.sydneyolympicpark.nsw.gov.au or drop into the Sydney Olympic Park Authority's Visitor Centre on Herb Elliott Avenue in Sydney Olympic Park. Telephone 9714 7300.

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## Sign Types

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This section is superseded and replaced by PEDM Signage 2008.
Sydney’s premier sporting and entertainment precinct, Sydney Olympic Park is also a showcase for award-winning Australian water recycling technology.

The Water Reclamation and Management Scheme (WRAMS) at Sydney Olympic Park saves each year an estimated 850 million litres of Sydney’s drinking water the equivalent of more than 250 Olympic swimming pools through the use of recycled stormwater and wastewater.

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Design Guidelines

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THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008
The typeface for the Sydney Olympic Parklands directional sign types is the Olympic 2000 font.

This typeface is compatible with standard software programmes used with standard manufacturing techniques.

It is the primary typeface and is to be used on all directional signs.

No other weights or styles are available in the Olympic font.

The directional sign types are:

- Orientation sign
- Map sign
- Circulation sign
- Minor Circulation sign
- Destination sign
Design Guidelines

Graphic Guidelines

Typeface for Interpretive signs

The typeface for the Sydney Olympic Parklands interpretive signs is **Akzidenz Grotesk (plain)**.

This typeface is compatible with standard software programmes used with standard manufacturing techniques.

Interpretive sign types are:

- Large Interpretive sign
- Medium Interpretive sign
- Touch Screen

Other types:

- Commemorative signs

**THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008**
Message Guidelines

Directional Messages
Wording for all signs will acknowledge these principles:
• Consistent flow of information.
• Short as possible in order to be read quickly.
• Mean the same thing to all people.
• Use of plain English.
• Limit the use of uppercase letters to the beginning of lines, warnings and place names.
• Upper and lower case lettering to be used for maximum legibility.
• Punctuation to be avoided.
• Hyphenation not to be used.
• One line for one message.
• Limit the number of messages to the least number necessary to avoid confusion and over information.

Logic and consistence
• Destinations will be listed in order of occurrence for directional signs.

Language
• Signs will be written in English.

Flexibility
Directional signs are designed to allow for maximum flexibility and the interchangeability of message elements when required.

Directional fingers and sign panels are fabricated to allow for interchange between signs and simple removal by a manufacturer if a message panel or directional finger requires an update. The fingers and panels can also be recycled unless damaged.

It is important that in any signage system that directional messages, sign fingers or sign panels are removed and or replaced immediately once the information they contain is no longer relevant.
Messages and text

Spacing

Tracking and kerning: the spacing between the letters will appear to create a visually consistent rhythm of strokes and spaces. By adjusting letterspacing, it is possible to improve legibility for the different uses of the text - see examples this page.

Word spacing must strike a balance between being too narrow, so that the words run together, and being too wide, so that the eye trips into the space between the words.

Visual Length of messages

The length of a line should be comfortable to read. If too short, words and phrases visually break up. If too long, the reader must search for the beginning of each line.

Word structure

The most readable arrangement of letters for sign messages is upper and lowercase letters. Selective capitalisation can be used to place emphasis on a particular word within a phrase or sentence. Selective words will be highlighted in a sign message schedule and approved by the Sydney Olympic Park Authority.

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Access Issues

Legibility
This typeface has a large x-height. One of the advantages of typefaces with large x-heights is that a smaller size can be specified without sacrificing legibility or readability. Typefaces of the same point size may appear smaller or larger because of the difference in their x-heights. The x-height of the Olympic typeface is approximately two thirds the height of the height of the uppercase letter, which is also recommended for better legibility.

- Wherever possible, pictograms should replace words.
- Signs containing interpretive or other detailed information will be adjacent to seating.
- Language used on signs will be positive - ie. Accessible Toilets not Disabled toilets.
- Signs indicating destinations will give clear information on the degree of difficulty and distance involved. This is to be achieved on the message panels and maps.

Height of signs
Message panels, map lightboxes and directional ‘fingers’ in these Signage Guidelines comply with the current Australian Standards.

Height of letters
The lettering height will vary for different signs, however the height of letters (Y Height) on directional message panels and directional ‘fingers’, complies with this guide.
The arrow has been developed as a graphic device to indicate or instruct direction.

This arrow design is appropriate for most signing applications and is the most widely used for international applications.

To ensure clear consistent understanding of the information depicted by the arrow, the guidelines for their use indicated herein are to be followed.

1. For design consistency, one arrow will be used throughout the Parklands for directional signs.

2. Closest destination first: top of the directional sign panel. Destinations displayed below are to be in the order of distance away from the sign location with the arrow direction to suit.

3. Arrows will be ranged left when applied to directional signs with messages and are to range right when messages are to the right.

4. Arrows are never to be used upside down. They will be up, left and right oriented only.

5. Arrows will indicate corner directions when positioned at 45°.

6. Size of arrow is 3 times Y height (uppercase) minimum.
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Directional panels

Graphic Set Out

Specific Details

Typeface : PS 70a

Colours : PS 71a

Pictograms : PS74a - PS74c

Sign Types : PS76a

Fixing details : PS76b

Format :
- Arrows should be located on the side of the sign panel to which they are pointing.
- Uppercase lettering height is as shown - larger than minimum size required by Australian Standards for viewing distance.

Panels :
- Distances - Closest destination first, in order of distance. Arrows follow guidelines PS70f
- The background of the sign panels is a semi gloss finish.

Not to scale
Design Guidelines

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Directional ‘fingers’

Graphic Set Out

Specific Details

**Typeface** : PS70a

**Colours** : PS 71a

**Sign Type** : PS 77a

**Assembly** : PS77b

---

**Design Guidelines**

**Design Intent Only**

**PS70h**
Design Guidelines

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Destination Sign Graphic

Graphic Set Out

The logotype is used as an identifying element of the destination signs and is to be used as demonstrated in these signage guidelines.

The proportions shown must be maintained when the logotype is reduced or enlarged.

Specific Details

Finishes: Lettering to be cut from aluminium and recessed into sign panel to remain flush with the finished surface of sign.

Colours:
- Letters to be painted bright white - two part polyurethane, satin finish.
- Background colour: Refer to PS71a

Fixing: PS 78b

Design Intent Only

PS70i
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**Colour**

**Paint**
One paint colour has been selected for the majority of coloured painted surfaces in the sign family.

This colour is **Dulux 'Midnight Haze'**  
Reference Number: 90 BG 08/112

**Painted elements are:**

- Anchor Point name - PS 75a
- Destination sign Graphic background - Sign Type PS 70i
- Directional panels - PS 70g
- Directional sign fingers - PS70h

**Vinyl**

Text messages for message panels and destination fingers:
White reflective vinyl - Class 1 according to AS 1906 part 1 unless otherwise stated.

Distances on destination fingers:
White reflective vinyl - Class 1 according to AS 1906 part 1 unless otherwise stated.

Distances on sign panels:
Graphi Cal 'Slate Green' No. 805

**Arrows**:
White reflective vinyl.

**Pictograms**:
Refer to PS 74a - 74d

**Timber**:
Paint finish Sikkens Cetol THB 3 coat system, Colour 009 Dark Oak (or approved equivalent).

**Lightbox**:
Frame painted gloss black
Materials and Finishes

Timber
Recycled Ironbark or Blackbutt beams - dressed to specified sizes. Available from most recycled timber yards in 6.0 metre lengths.

Concrete
Natural unfinished concrete, steel reinforcing, matt finish.

Aluminium
Aluminium plate to be used for the following:
- Anchor Point name.
- Circulation sign blades/directional ‘fingers’.
- Directional message panel.
- Destination graphic assembly.
- Pictograms on Regulation and Minor signs.
- Sign supports for Large and Medium interpretive signs.
- Sign supports for Commemorative sign plaques.

Typical paving for finishing footings at pathway nodes.
Washed concrete pavement - to comply with AS 1379, strength 20MPa at 28 days.

PEDM: Refer to Paving Section detail PP 13a
Specifications: Minimum effective cement content, 280kg/m3, minimum air content 4.5%.
Maximum slump: 80mm
Aggregate: To match 100% Crushed Nepean Gravel 20mm (existing)
Surfaces protection

Paint finishes
Materials finishes subject to corrosion (ie mild steel) shall be galvanised, primed or otherwise treated with permanent protection. Undercoats shall be evenly applied to conceal frames and supports.

Finishes for all materials coloured surfaces painted in a two part polyurethane.

Anti Graffiti Coatings
Anti graffiti coatings may be applied to graphic areas and all surfaces.
Recommended method is the AGS 3502 matt clear graffiti protective coating by Trion Tensid AB (Sweden) (or approved equivalent). This will be a permanent coating that offers long term environmental and graffiti protection. An anti graffiti system will be available in matt, satin or gloss.

Painted onto all surfaces, the only restriction is that a water based stain rather than a mineral based stain must be applied to the timber.
Use ‘Graffof’ (or approved equivalent) to remove residue and neutralise with water. A brush should be used to massage graffiti off, rather than abrasives.

Materials Protection

Timber
• Protective coating : Sikkens Cetol THB, Colour : Dark Oak (or approved equivalent)
• Caution that this particular finish is not applied before an anti graffiti paint system as it is turps based and will react with the anti graffiti system.
• A water based UV protection must be used, such as Cetol UV Interior (or approved equivalent.) The anti graffiti system can provide additional UV protection and can also be tinted as an alternative to an exterior timber stain product.

Concrete
The recommended anti graffiti system can be applied to concrete, however some darkening in the colour may occur. The base tint for the concrete can be lighter to compensate for this.

Aluminium
• Two part clear satin polyurethane coating to prevent scratching and removal of vinyl graphics and paint.
• Dual purpose as a graffiti protection, and can be cleaned with thinners or prepsol.

Footing brackets
• Hot dip galvanise all brackets before fixing sign and pouring concrete at sign locations.

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Recommended techniques for reproducing graphics.

Well known processes that have been tried and tested and are accepted by the community users and sign manufacturers will be used for the application of graphic elements, pictograms and messages.

In most cases, it is desirable that graphic elements and letters are permanently applied to sign slats or panels.

Message application for sign types will be consistent. One or more technique can be used per sign, however whenever message slats are changed around or replaced, messages and graphics must be re-applied using the same technique to maintain consistency.

Application

Techniques selected for the application of colour should be carefully chosen to ensure colour rendition is as colour fast as possible in direct sunlight. Paints and coatings will fade in time, but some will fade faster than others. Manufacturers specifications must be checked and tested.

The most durable and fade resistant paints and coatings should be selected following testing.

Directional signs

The following techniques and processes are the recommended methods for the production of lettering and graphic forms:

Adhesive Vinyl lettering is the preferred method of applying of applying graphics to most surfaces as it is a quick, accurate and cost effective method. Adhesive vinyls are available in a number of standard colours and external grades. Cast vinyl grade is specified for use in all applications for its external durability, colour fast 5 year guarantee and stability in fluctuating weather conditions. Translucent and opaque grades are available.

Class 1 reflective vinyls are also available in a number of colours and are strongly recommended for external vehicular signs and pedestrian signs in illuminated areas.

Vinyl is used to create negatives or expose a painted surface for ‘Mask and Spray’ techniques, which can replace a simple screen print where low runs are required.

Laser cutting is the most accurate method of cutting letters and shapes to any detailed form. Edges must be cleaned after cutting to remove singed material. Large shapes can be cut out from heavy gauge metal using a specialised water jet technique.

Interpretive signs.

Recommended options are:

1. Photo Anodised aluminium

Single or four colour image is injected into the anodic layer of a 1.6mm aluminium panel. This produces an extremely clear and high resolution photographic image or solid colour. It is resistant to surface graffiti and has good ultra violet resistance.

Film is created from digital artwork. Panel sizes are determined by standard four colour film sizes but can be butt joined with only a hairline visible.

2. 3M Scotchcal adhesive vinyl.

Most cost effective method of reproducing both solid graphics and photographic images. Files are downloaded from disc and printed onto adhesive vinyl which is laminated with an anti graffiti coating, either clear polyurethane or a tedlar laminate. The print is cut to size and fixed to a solid substrate such as aluminium. The resolution is of a fairly poor quality, but it does have some advantages.

3. Acid Etch

This technique also requires film made from the original digital files to expose aluminium, steel or stainless steel to acid. The etched areas are then filled with an enamel which is baked into the surface. It provides very good resistance to vandalism and graffiti plus failure to fade in sunlight. It is limited to solid or screened single colours and low resolution for photos.

Commemorative plaques.

Acid etched stainless steel is recommended - see above.

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008
Pictograms

Pictograms are picture messages without words. They are used as both a reinforcement of word messages and an independent order of informational elements in their own right. They are an essential graphic communication device for signs where a simple non-typographical message is appropriate and is used to reinforce sign messages.

Other advantages of pictogram use are:
• Clear communication internationally between cultures of different nations without text.
• International graphic recognition.
• Distinctive design which avoids stylistic fads and appeals to a multi-cultural audience.

Refer to Guidelines sheets PS for set out details.

Pictogram categories:
1. Services
2. Information
3. Activities
4. Access
5. Regulation

Colours:
Standard: Black and white.
Access Symbols: Blue and white.
• Match Pantone 653

Parking: Blue and white.
• Match Pantone 653

First Aid: Red and white.
• Match Pantone 032
Design Guidelines

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Information

21. Information
22. Stairs
23. Strollers
24. First Aid
25. Vehicle access
26. Bus Stop
27. Ferry Transportation
28. Rail Transportation
29. Litter Disposal
30. Litter Disposal
31. Drinking Water
32. Bubbler
33. Pedestrians
34. Leashed Pets
35. Horse Trail
36. Shared Path

Pictograms

References:


AS 2342 - 1992 Development, testing and implementation of information and safety symbols and symbolic signs.

Official Signs and Icons - Ultimate Symbol, United States of America. Endorsed by the Society of Environmental Designers.

UEDM Pictograms, pages S3 and S4

The recommended pictograms within these guidelines are to supplement UEDM pictograms in non-service situations.
**Design Guidelines**

**THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008**

**Activities**

- 37. Point of Interest
- 38. Shelter
- 39. Picnic Tables
- 40. Playground
- 41. Bicycles
- 42. Viewing Platform
- 43. Wildlife
- 44. Boat Ramp
- 45. Open Fires
- 46. BBQ

**Access**

- 47. Disabled Access
- 48. Hearing and speech impaired telephone
- 49. Volume Control Telephone
- 50. Hearing Impaired
- 51. Difficult path
- 52. Easy path

**Access issues**

Internationally recognised pictograms to assist people with hearing and/or visual disabilities and enhance the ease of wayfinding for all people.

Pictograms will be used to give clear information on the degree of difficulty of a given route or pathway.
This set of pictograms are used for prohibitory and regulation signs only.

1. No jumping  
2. No Alcohol  
3. No Bicycles  
4. No camping  
5. No cans or glass  
6. No Diving  
7. Do Not Drink  
8. No Fishing  
9. No Littering  
10. No Trailbikes  
11. No parking  
12. No pets  
13. No Skateboards  
14. No Smoking  
15. No Swimming  
16. No Trucks  
17. No vehicles  
18. No Wading  
19. No Open Fires  
20. No cats  
21. No Entry  
22. Warning
**Design Guidelines**

**Orientation Sign**

**Location**: Facility Node.

**Function**: 
- To be visible from a distance by cars and pedestrians.
- Primary directional information.

A typical orientation sign will:
- Reinforce the Sydney Olympic Parklands identity and name.
- Name the Facility Node.
- Provide A0 size illuminated maps which may include pedestrian pathway systems, cycle path routes, detail local maps containing interpretive information at specific sites.

**Specific details**

**Colours**: PS 71a

**Materials**: See notes & PS 72a

**Footings**: PS 75b, PS 75c

**Lightbox**:
- "Interium" external lightbox: Tolini model: frame size 1275 x 927mm (to suit A0 image) area 841x1189mm - waterproof and hinged on right hand side. Recessed into face of concrete sign. Recessed dimensions to suit depth of frame (47mm) plus tolerance to manufacturer’s specifications. Frame is to sit flush against the edges of the concrete.
- Fluorescent Tubes: 2 off
  - T5 16mm diameter 35w 6000K ‘Daylight’
  - Model: Osram FH 35w/860 ‘Daylight’. For best colour rendition, replace both tubes at the same time.

**Ballast**:
- Dual output to suit T5 35w tubes.
- Model: OSRAM Quicktronic QT-FH 2x35w/230-240

**Design Intent Only**

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**THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008**
THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Orientation and Map sign

Footings - Elevation

Specific details

Materials: Natural unfinished concrete.

Paving around base:
Washed concrete pavement - to comply with AS 1379, strength 20mpa at 28 days.

Specifications:
Minimum effective cement content, 280kg/m³, minimum air content 4.5%.

Maximum slump: 80mm

Aggregate: 100% Crushed Nepean Gravel 20mm

Note:
Sign 1 refers to Orientation sign
Sign 2 refers to Map sign

Not to scale
Design Guidelines

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Orientation and Map sign

Footings - Section

Specific details

See drawing notes.

Note:
Sign 1 refers to Orientation sign
Sign 2 refers to Map sign.

Not to scale
Map sign

Location: Intersection.
Function: Information refreshment / reorientation.

A typical local orientation sign will:
• Provide directional information.
• Provide a map.
• Provide ‘What’s on’ information in a waterproof poster cabinet.

Specific details

Colours: PS 71a
Materials: PS 72a
Message panel: PS 70g
Footings: PS 75b, PS 75c
Lightbox: Refer to PS75a
Poster Cabinet: Interium ‘Tolini’ case without electronics and fluorescent tubes.
Design Guidelines

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Map sign

Directional panels

Concrete sign face - relief areas cast in concrete mould for the installation of lightboxes, pinboard and sign slats.

Lightbox here
cavity to suit 1275 x 927mm frame

Slate here
Pre cast concrete - smooth finish

Front elevation

Slat fixing detail
Not to scale

5mm space above top and bottom slat to edge of concrete

Pin fix to the inside of concrete recess and pack out with single black plastic washers to give a 6.0mm space behind each slat. Set washers in far enough so they are not easily visible from the side.

140mm high each slat

5mm space between each slat
Circulation Signs

Location: Major Junction

Function:
- To provide directional information at major pathway junctions.
- Indicate distances to destinations.
- Pictograms to demonstrate degree of difficulty.

Specific details

Colours: PS 71a
Materials: PS 72a
Graphic set-out: PS 70h
General Assembly: PS 77b, 80a
Footings: PS 80b, PS 80c
**Design Guidelines**

**THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008**

- **Circulation signs**
  - Finger blade is 6.0mm aluminium plate fabricated as shown.
  - Screw fix sign finger blade to post with countersunk stainless steel screws.
  - Cover plate for screw heads 150 x 150mm painted same colour as blades.

- **General assembly**
  - Cover plate flush with post
  - Glue fix cover plate over screws
  - Recycled timber post as per specifications
Destination sign

**Location**: Place with a name.

**Sign Type**: Destination sign for places and buildings.

**Function**: One name to reinforce and identify the arrival point.

**Specific details**

**Materials**: Notes & PS 72a

**Destination name fixing**: PS 78b

**Graphic Guideline**: PS 70i

**Colours**: PS 71a

**Footings**: PS80b, PS 80c

---

**Design Guidelines**

**THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008**

**Design Guidelines**

**Destination sign**

- **Location**: Place with a name.
- **Sign Type**: Destination sign for places and buildings.
- **Function**: One name to reinforce and identify the arrival point.

**Specific details**

- **Materials**: Notes & PS 72a
- **Destination name fixing**: PS 78b
- **Graphic Guideline**: PS 70i
- **Colours**: PS 71a
- **Footings**: PS80b, PS 80c

---

**Design Intent Only**

**PS78a**
**Design Guidelines**

**Destination sign**

**Destination name fixing**

**Scale 1:2**

2 x 3.0mm plates laminated - letters cut through top layer and filled with identical letters to fit flush. Aluminium painted bright white.

Countersunk socket head screws - heads painted black or use blackened stainless steel.

150 x 150mm dressed recycled hardwood timber post, dressed as specified.

**THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008**
Regulation Sign: Large

Function:
- To advise Park regulations and/or warning signs.
- Limitations and constraints.

Principles:
- To be visible by pedestrians.
- To appear non threatening.
- Use international symbols where possible.
- Maximum of four pictograms per sign.
- Not to dominate the landscape.

Specific details

Colours: PS 71a

Materials: PS 72a

Surface protection: PS 72b

Pictograms: PS 74d

Fixings: See notes attached.

Footings: PS 80b, PS 80c
General assembly

Circulation signs
Destination signs
Large Regulation signs

Footings: Refer to Engineer’s drawings PS 80b, PS 80c

Not to Scale

Stainless Steel nuts and bolts - Socket head type.

Welded galvanised steel bracket to engineer’s details. Refer to PS 80c

Ensure that there are no gaps between the base of the timber post and the plate. This is to prevent loose rocking of the post.

Concrete pad footing
Type FP2 - refer to PS 80b
Design Guidelines

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Pad Footings FP1 and FP2

Specific details

FP1 type for sign types:
- Small Regulation signs
- Minor circulation signs
- Commemorative signs
- Medium Interpretive signs

FP2 type for sign types:
- Circulation signs
- Identification signs
- Large Regulation signs

Materials: See notes

Concrete Strength: 25MPa. For depth of footing below ground refer to relevant steel bracket detail.

Scale 1:20

TYPICAL FOOTING PAD ‘FP1’
SCALE 1:20

TYPICAL FOOTING PAD ‘FP2’
SCALE 1:20
THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Footings and Bracket Details

Circulation signs
Destination signs
Large Regulation signs

Specific details

Materials: See notes & PS72a

Concrete Strength: 25MPa. For depth of footing below ground refer to relevant steel bracket detail.

Note: Post Support Bracket to be Hot dip galvanised after fabrication.

Pad footing type FP2: PS 80a

Not to scale

DESIGN INTENT ONLY

PS80c
**Minor Circulation Sign**

**Location**: Minor Junctions - the most simple T intersections or at path loop junctions which reconnect to the same path.

**Function**: Providing simple directional reinforcement with one directional indicator - a distance and a graphic or interpretive symbol.

**Specific details**

- **Colours**: PS 71a
- **Materials**: PS 72a
- **Pictograms**: PS 74a, 74b, 74c
- **Assembly**: see notes
- **Footings**: PS 80b, PS 83a

---

**Design Guidelines**

**Rout 10mm deep spaces for each pictogram plate. Each pictogram plate is 3.0mm thick aluminium painted satin black polyurethane. Vinyl graphics applied to each plate with clear polyurethane top coat.**

**Countersunk stainless steel screws fix each plate to the timber. Each screw is to sit flush with the surface of the aluminium plate - countersink the plates to sit the screws.**

**Recycled timber post, dressed to size specified - See specification notes.**

---

**PS81a**

**DESIGN INTENT ONLY**
Regulation Sign: Small

**Function**: To advise limitations and constraints.

**Principles**:
- To be visible by pedestrians.
- To appear non-threatening.
- Use international symbols where possible.
- Maximum of two pictograms per sign.
- Not to dominate the landscape.

**Specific details**

**Colours**: PS 71a

**Materials**: PS 72a

**Surface protection**: PS 72b

**Graphic reproduction**: PS 73a

**Pictograms**: PS 74d

**Fixings**: See notes attached.

**Footings**: PS 80b, PS 83a

Remove sharp top edge and create 10mm flat

Rout 10mm deep spaces for each pictogram plate. Each pictogram plate is 3.0mm thick aluminium painted satin black polyurethane. Vinyl graphics applied to each plate with clear polyurethane top coat.

Countersunk stainless steel screws fix each plate to the timber. Each screw is to sit flush with the surface of the aluminium plate - countersink the plates to sit the screws.

150 x 150mm dressed recycled hardwood timber post, dressed as specified.
**Design Guidelines**

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

---

**Footing and bracket details**

**Minor Circulation signs**

**Small Regulation signs**

**Specific details**

**Materials**: See notes & PS 72b

**Concrete Strength**: 25MPa. For depth of footing below ground refer to relevant steel bracket detail.

**Note**: Post support bracket to be hot dip galvanised after fabrication.

**Pad footing type FP1**: PS 80b

**Not to scale**

---

**Design Intent Only**

PS83a
**Plaques**

**In-ground or pavement**

**Functions:**
1. In-ground commemorative or directional elements which can also be utilised on freestanding timber structures.
2. To reinforce directional messages and pictograms used on regulatory signs.

**Principles:**
- To be visible by pedestrians and riders on bicycles.
- Use international symbols where possible.
- Not to dominate the landscape.

**Specific details**

**Materials:** See notes

**Fixing:** See notes

**Colours:** See notes

**Pictograms:** PS 74a - PS 74d

---

**Section AA**

300mm

Pavement marker is embedded into pedestrian and cycle paths and positioned along its centreline.

Bronze material cast with raised areas finished to expose bright finish. These areas will become worn and therefore remain as a bright surface. A texture or darker patina can be applied to the cast of the recessed areas to ensure that it gives a contrast to the graphic elements.

Height of raised areas (graphics) to manufacturer's specifications.

Grout or silicone sealant between edge of bitumen and marker.

Minimum 15mm at thickest raised area

Galvanised steel pins are threaded into holes tapped into the back of marker and are embedded into quickset cement poured into pavement cavity.

Regulatory Pavement marker. Refer to Pictogram Guidelines

---

**DESIGN INTENT ONLY**

**PS84a**
Commemorative Plaques

Freestanding

Location: A specific place, where a memory or ceremony is to be stated or celebrated.

Sign Type: Commemorative sign.

Function: Convey a single message - up to 40 words. A single image may be integrated if appropriate.

Specific details

Colours: PS 71a

Materials: PS 72a

Surface protection: PS 72b

Graphic reproduction: PS 73a

Assembly: PS 85b

Footings: PS 85c

6.0mm bronze or stainless steel plaque is pin fixed to the top surface of the timber post as shown. The plate is to 'float' 10mm off the timber surface.

Leave 10mm flat across the top edge.
Commemorative Plaques

General assembly

Specific Details:

Engineering details: refer to PS85c and PS 80b

Not to scale

3.0mm Aluminium plate for graphics panel - Photo anodised graphics applied directly to this plate.

Recycled timber post. Routed to accommodate steel brackets.

Stainless Steel nuts and bolts - Socket head type.

Bracket - refer to PS 85c

Ensure that there are no gaps between the base of the timber post and the plate. This is to prevent loose rocking of the post.

‘Snake eye’ stainless steel screws.

Concrete pad footing
Type FP2 - refer to PS 80b
THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Commemorative Plaques

Footing and bracket details

Specific details

Materials: See notes

Concrete Strength: 25MPa.

Note: Support bracket to be hot dipped galvanised after fabrication.

Pad footing type FP1: PS 80b
Vehicular Directional Sign

**Location**: Within Sydney Olympic Parklands at turn offs.

**Sign Type**: Sydney Olympic Parklands vehicular directional signs based on RTA principals and based on the existing Sydney Olympic Park vehicular directional system.

**Principle**: One message at destination turn-offs.

**Function**: Provide directions to Facility Nodes.


**RTA Standards**: Refer to traffic Engineering Manual for specific details regarding dimensions, letter height according to sign type required.

**Colours**: Class 1 white and green letters on Class 2A standard green background.

**Typeface**: Olympic font: sizes to specifications as above.
Interpretive Signs

Touch Screen Unit

Locations:

External: Facility node, also associated with its own freestanding picnic shelter or weather proof shade structure.

Internal: Visitor Centres.

Sign Type: Touch Screen.

Technology: Refer to PS 87b

Function:

• Provide a broad overview of interpretive issues of the immediate vicinity.

• Suitable for group learning / outdoor education.

Examples:

Large, simple graphics. May also incorporate touch screens, audio visual points - links to guided tours, lighting effects triggered by automatic or prompted switches, graphic panels with descriptive images.

Materials:

Cladding in fibreglass, aluminium and stainless steel. LCD monitor to be laminated to 8.0mm thick 'Touch Tough' glass.

Graphics:

Site specific graphics can be sandblasted or screen printed onto front fascia of unit.

Restrictions: Unit must be located under cover to protect glass touchscreen and LCD display from ultra violet light.

Note: This is an example only - Specific graphics and layouts will be designed together with future exhibition and interactive graphic design for the Parklands.

DESIGN INTENT ONLY

PS87a
Design Guidelines

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Step 1: Indicative of the type of icons which can be simply touched on a screen to access the next layer of information.

Interpretive Signs

Touch Screen Technology

Note: This is an example only - Specific graphics and layouts will be designed together with future exhibition and interactive graphic design for the Parklands.

- Relay information in modules of 1500m via transmitters.
- A hidden camera records moving and still images (with sound as an option.) Camera can be solar cell powered or battery operated.
- Web page - live interpretive information.
- Network server - some options available for interpretive signs.
- Modem to PC - (Video conferencing)
- Modem to PC in the field - (interactive touch screen - interpretive signs)
- Battery operated transmitter

Step 2: Access next layer.

Step 3: Access next layer.

Possible live images.
**Large Interpretive Sign**

**Location:** Facility node.

**Sign Type:** Large interpretive sign.

**Function:** Provide a broad overview of interpretive issues of the immediate vicinity.

Suitable for group learning / outdoor education.

**Specific details:**

- **Materials:** PS 72a
- **Surface protection:** PS 72b
- **Graphic reproduction:** PS 73a
- **Footings:** PS 75b and PS 75c
- **Assembly:** See notes

---

**Water Reclamation and Management Scheme (WRAMS)**

Sydney's premier sporting and entertainment precinct, Sydney Olympic Park, is also a showcase for award-winning Australian water recycling technology.

The Water Reclamation and Management Scheme (WRAMS) at Sydney Olympic Park savings each year an estimated 850 million litres of Sydney's drinking water the equivalent of more than 250 Olympic swimming pools through the use of recycled stormwater and wastewater.

WRAMS reduces our demand on Sydney's drinking water by 50% and reduces our discharge of sewage into the ocean by 90%.

Recycled water is clean and safe after cleaning and treatment processes. Part of the drinking water from the mains supply will be used where drinking water quality is not required, such as irrigation for public landscapes and home gardens, toilet flushing, fire fighting and washing cars.

WRAMS is complemented by other water-saving initiatives at Sydney Olympic Park, such as rainwater collection systems at Stadium Australia and the main arena of Sydney Showground. Sydney Olympic Park is planted with local Australian native plants that require very little extra water.

If you would like to know more about Millennium Parklands or WRAMS and other environmental works remember to visit our website on www.sydneyolympicpark.nsw.gov.au or drop into the Sydney Olympic Park Authority's Visitor Centre on Herb Elliott Avenue in Sydney Olympic Park. Telephone 9714 7300.
Medium Interpretive Sign

**Location**: At a specific interpretation sites - aimed at what you can see.

Typically associated with the path network or a freestanding viewing platform, a lookout or along a boardwalk.

**Sign Type**: Static medium interpretive sign.

**Function**: Communicate a message about a place or theme. Contain maximum 200 words.

**Specific details**:

**Materials**: PS 72a

**Graphic reproduction**: PS 73a

**Footings**: PS 80b, PS 89c

**Assembly**: PS 89b

---

Graphic panels should be firmly laminated to an aluminium base. Note that edges are slightly bent down along the bottom and flat across the top.

Recycled timber post, dressed to size specified. 2 x 150 x 150mm posts bolted together in all cases to achieve wider timber posts.

**Design Intent Only**

PS89a
Medium Interpretive sign

General assembly

Specific Details:
Engineering details: refer to PS89c and PS 80b

Not to scale

Design Guidelines

THIS SECTION IS SUPERSEDED AND REPLACED BY PEDM SIGNAGE 2008

Concrete pad footing
Type FP1 - refer to PS 80b

Recycled timber post. Routed to accommodate steel brackets (this post only)

Stainless Steel nuts and bolts - Socket head type.

Welded and hot dipped galvanised steel bracket - refer to PS 89c

Ensure that there are no gaps between the base of the timber post and the plate. This is to prevent loose rocking of the post.

8.0mm aluminium plate for graphic panel with aluminium plate bracket welded to underside. Powdercoat satin black.

Photo anodised graphics applied to 3.0mm aluminium plate which is later laminated to this face

Sydney Olympic Park Authority   Revision July 2002   Parklands Elements Design Manual

DESIGN INTENT ONLY

PS89b
Medium Interpretive sign

Footage and bracket details

Specific details

Materials: See notes & PS 80b

Concrete Strength: 25MPa.

Note: Support bracket to be hot dipped galvanised after fabrication.

Pad footing type FP1: PS 80b

DESIGN INTENT ONLY

PS89c
Authorship & Acknowledgements
Authorship & Acknowledgements

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SolarG
(Solar Light Development)
Gordon Manzione
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Pages within the PEDM were revised in conjunction with the following consultants:
* Clouston Associates
* CONTEXT Landscape Design
* Knox & Partners Landscape Architects Pty Ltd
* Mather & Associates Pty Ltd
* Pittendrigh Shinkfield & Bruce Pty Ltd

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* Tonkin Zulaikha Architects
* HASSELL Pty Ltd
* Barry Webb and Associates
* KWA Design
* Emery Vincent Design
* Connell Wagner Pty Ltd
* Access Australia
# Elements in the landscape

<table>
<thead>
<tr>
<th>Element</th>
<th>Components</th>
<th>Material</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLE1</td>
<td>Minor walls</td>
<td>Concrete</td>
<td></td>
</tr>
<tr>
<td>PLE2</td>
<td>Typical Steps</td>
<td>Recycled hardwood timber planks (see below) on steel structure. Recycled hardwood timber: Grade One: natural oil finish Species: Turpentine Iron Bark Grey Gum White Mahogany Tallowwood Alternative: Treated timber with Copper Azole – Type A (CBA-A)</td>
<td>Treated timber with Copper Azole (NSW): Prime Pine Minto NSW Contact: Stuart Montgomery Ph: (02) 9820 1577 Boral Contact: Bob Cox Ph: (02) 6632 1866 J Natalis &amp; Son Grafton, NSW Contact: Trevor Bailey Ph: (02) 6642 3477</td>
</tr>
<tr>
<td>PLE3</td>
<td>Typical Ramp</td>
<td>Material to correspond to location and material selected for path hierarchy/ type with which it is associated. See PEDM Paving Section for details.</td>
<td></td>
</tr>
</tbody>
</table>
## Constructed Elements

### Materials Palette for Selected Large Elements of the PEDM

<table>
<thead>
<tr>
<th>Element</th>
<th>Components</th>
<th>Material</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLE4 Boardwalks (general)</td>
<td>Posts</td>
<td>Recycled hardwood timber: Grade One: no treatments required</td>
<td>Species: Turpentine Iron Bark Grey Gum White Mahogany Tallowwood Alternative: Treated timber with Copper Azole – Type A (CBA-A)</td>
</tr>
<tr>
<td></td>
<td>Decking</td>
<td>Recycled hardwood timber (see above)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beams</td>
<td>Recycled hardwood timber (see above)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Balustrades</td>
<td>Galvanised RHS posts Stainless Steel Wires Timber top rail (see above)</td>
<td></td>
</tr>
<tr>
<td>PLE5 Footbridges</td>
<td>Decking</td>
<td>Recycled hardwood timber as for boardwalks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decking</td>
<td>Recycled hardwood timber as for boardwalks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structure</td>
<td>Recycled hardwood timber as for boardwalks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Balustrading</td>
<td>Steel and timber as for boardwalk.</td>
<td></td>
</tr>
<tr>
<td>PLE6 Viewing Platforms</td>
<td>Floor (on ground)</td>
<td>Informal lookouts: Timber (see above) or grassed platform Hill top lookouts: Markers- grass Mounds- insitu concrete with dowelled joints</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor (suspended)</td>
<td>Recycled hardwood timber decking as for boardwalks.</td>
<td></td>
</tr>
</tbody>
</table>
# Appendix A

## Materials Palette for Selected Large Elements of the PEDM

### Shelters

<table>
<thead>
<tr>
<th>Element</th>
<th>Components</th>
<th>Material</th>
<th>Supplier</th>
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</thead>
<tbody>
<tr>
<td>PLE7/ PLE8</td>
<td>Picnic shelter/ Shade structure (permanent)</td>
<td>Footings</td>
<td>Concrete</td>
</tr>
<tr>
<td></td>
<td>Footing shoe</td>
<td>Galvanised MS blade footing shoe.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor (on ground)</td>
<td>Reinforced concrete slab with smooth steel troweled finish. Natural colour.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floor (suspended)</td>
<td>Recycled hardwood decking timber (see below)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NB: only to be used in specific circumstances ie: if slope of site doesn’t allow flat ground for shelter to be placed.</td>
<td></td>
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<tr>
<td></td>
<td>Posts</td>
<td>Sustainable hardwood decking timber (see below)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof sheeting</td>
<td>Zincalume corrugated iron</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timber</td>
<td>Recycled hardwood timber: Grade One: natural oil finish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species:</td>
<td>Turpentine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iron Bark</td>
<td>Grey Gum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>White Mahogany</td>
<td>Tallowwood</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof Battens</td>
<td>Recycled hardwood timber (see above)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ceiling</td>
<td>Plywood- renewable timber</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rafters</td>
<td>Galvanised steel angle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roof water collection device (rainwater tank: to be housed within enclosure wall structure)</td>
<td>Polyethylene</td>
<td>Similar or equal to: City Rainwater Tanks (Aust) Pty. Ltd. 11 Severn Street St. Marys, NSW 2760 PH: (02) 9623 2428</td>
</tr>
<tr>
<td></td>
<td>Gutters and down pipes</td>
<td>Stainless steel. Gutter to be in continuous length.</td>
<td>Similar or equal to: BP Solar: 1/100 Old Pittwater Road Brookvale NSW 2100 PH: (02) 9454 5127 Contact: Nigel Morris</td>
</tr>
<tr>
<td></td>
<td>Solar Panels and battery box</td>
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*Please note: This information is intended for planning purposes only and should not be considered as definitive. Always consult with local authorities and professional contractors for guidance on materials and project specifications.*
### Shelters cont.

<table>
<thead>
<tr>
<th>Element</th>
<th>Components</th>
<th>Material</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>8W fluro: internal lighting to shelter</td>
<td>part of Solar package</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20W fluro: area lighting to barbecues</td>
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<td></td>
</tr>
<tr>
<td>Walls</td>
<td>Timber battens or timber boards on a timber studframe.</td>
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</table>
### Furniture

<table>
<thead>
<tr>
<th>Element</th>
<th>Components</th>
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<th>Supplier</th>
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<tbody>
<tr>
<td><strong>PLE9</strong> Barbecues</td>
<td>Hot plate with electric timer, gas fired.</td>
<td>Stainless steel</td>
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<tr>
<td></td>
<td>Barbecue base</td>
<td>Masonry (with cement rendered base)</td>
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</tr>
<tr>
<td></td>
<td>Top</td>
<td>Concrete with stainless steel cladding.</td>
<td></td>
</tr>
<tr>
<td><strong>PLE10</strong> Enclosure wall/Drink station</td>
<td>Wall (with recesses to allow installation of drink/fast food machine, telephones, hot water unit, minor storage, electrical switchboards, signage, bubblers etc). Wall to fit between structure of shelters.</td>
<td>Timber stud frame with timber boarding. Cladding as for Picnic Shelter walls.</td>
<td></td>
</tr>
<tr>
<td><strong>PLE11</strong> Vehicular Gate</td>
<td>Post</td>
<td>Galvanised steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Barrier arm</td>
<td>Galvanised steel</td>
<td>Stainless steel tie wire and pipe.</td>
</tr>
<tr>
<td><strong>PLE12</strong> Vehicular Barrier</td>
<td>Post Recycled hardwood timber: Grade One: no treatments required. Species: Turpentine Iron Bark Grey Gum White Mahogany Tallowwood Alternative: Treated timber with Copper Azole – Type A (CBA-A)</td>
<td>Galvanised MS bolt fixing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cross bar</td>
<td>As above</td>
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# Table of Contents

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1. **Introduction**

**Purpose**

This appendix establishes the brief for the design of selected large elements that in turn forms part of the Sydney Olympic Parklands Park Elements Design Manual. This document has been compiled following various workshops with Sydney Olympic Park Authority’s (SOPA) personnel from Planning & Urban Design, Parklands teams and parklands program team in which the concerns, aspirations and requirement of the various sections within SOPA were obtained. This document should be referred to for guidance in the siting, application and documentation of the various parkland elements.

This document outlines the following requirements for the selected large elements.

- intended function/purpose
- the number of each element likely to be required;
- their location/setting;
- expected levels of use (number of people, size of groups etc.);
- access (disabled / elderly) and safety requirements;
- maintenance considerations;
- Parklands design consideration;
- program requirements; and
- potential interpretative opportunities.
1. Introduction

Setout and Scope
This report is setout in two parts. Section 1 discusses general requirements which are relevant to the design of all of the large elements whilst Section 2 identifies specific requirements for each of the selected large elements.

The brief focuses on the following selected elements, which formed part of HASSELL’s commission:

- minor retaining walls;
- steps;
- ramps;
- boardwalks;
- viewing platforms/lookouts;
- foot bridges;
- picnic shelters;
- shade structures;
- barbecues;
- drink stations;
- small vehicular gates;
- small vehicular barriers.
2. **General Requirements**

General principles, objectives and requirements relevant to the design of all of the large Parklands elements are set out below under the areas of:

- Parklands design consideration;
- program requirements; and
- maintenance and management considerations.

### 2.1 Parklands Design Considerations

Consideration should be given to the following general parkland design issues.

- The elements must be simple and uncomplicated, robust and designed as part of the parkland setting in which they occur, rather than being features in the landscape.
- Temporary elements in sensitive areas could have an art component to celebrate their temporary nature and the experience of the setting.
- Materials and finishes should be selected which do not become outdated or are likely to be discontinued or unavailable in the future. Quality material should be used to ensure they are long lived to leave a legacy for future generations and convey the value and esteem in which Parklands are held by the community.
- Elements/structures should generally be clustered around activity nodes in the Parklands to service the high use areas and prevent undue clutter in the remainder of the Parklands. In remote parts of the Parklands very limited provision of facilities is desirable so as to promote the experience of ‘nature’ and isolation.
- Individual elements should ideally be adaptable and capable of supporting a range of functions or attachments so as to reduce the need for other separate items to be placed in the Parklands.
- In keeping with environmental sustainability practices, recycled materials renewable resources and materials with low manufacturing and transportation energy costs are to be used where possible.
- The basic pallet of materials and finishes are to be unstained recycled hardwood, galvanised steel, off form exposed aggregate concrete, asphaltic concrete and stabilised decomposed granite.

### 2.2 Program Requirements

Consideration should be given to the following program requirements when designing, documenting and siting the large parkland elements.

- Maximise the potential use of elements and structure for a range of variety activities, events and commercial opportunities by providing in-built flexibility and adaptability in the design.
- SOPA’s Access Strategies requirements are to be addressed in the design and location of the element. Adequate shelter and shade is crucial for users.
2. General Requirements

especially in the initial stages of the Parklands if remote parts of the site are to be accessed by the elderly and disabled.

- Potential funding opportunities may be available through the hiring of venues and corporate sponsorship. Temporary, removable or adaptable components which can facilitate corporate sponsorship and venue hire should be considered.
- The implementation of elements could be undertaken as part of the Parklands program with the initial elements treated as prototypes for trial and feedback from the community. The design and updating of the PEDM could be an iterative process incorporated into the program.

2.3 Maintenance and Management Considerations

Consideration should be given to the following maintenance and management issues.

- Materials and items selected must be long lived, robust and easily cleaned to reduce maintenance costs.
- Long term availability of materials and property items must be assured to enable elements can be replaced or extended in the same materials and products in the future.
- Removable items must be easily handled, stacked and stored. Finishes must be robust to prevent chipping and scratching.
- Where possible, parts, fixings and fittings should if possible be standardised between elements to reduce the stock of spare parts and tools required by the maintenance teams.
- Where items are not required to be removable they should be made permanent to minimise undue costs in manufacturing and maintenance.
- The implications of temporary verses permanent elements should be well thought through as temporary items may end up permanent.
- Potential exists for certain items to be designed as a ‘kit of parts’ for multiple applications eg. - a removable fence as a temporary barrier.
- bollards with chain links as temporary barriers.
- The provision of power, water and telecommunications services to multi-use areas and activity nodes/structures should be considered to provide maximum flexibility of use for public and commercial events and venue hire. The provision of these services will make selected settings more commercially marketable and increases the chances of obtaining corporate sponsorship.
3. Specific Requirements for Specific Elements

Specific requirements for each of the selected large elements are outlined below. Elements have been ordered and numbered to correspond to the design details outlined in the Parklands Elements Design Manual.

3.1 Minor Retaining Wall Structures PLE1

**Intended Function/Purpose**
- To retain earth embankments up to 1m in height in prominent parts of the Parklands adjacent to activity nodes/park entries and the urban core. Wherever possible the use of retaining devices should be minimised in preference for design solutions that work with the natural underlying landform. Gabion wall structures are the preferred retaining devices to be used throughout the majority of the Parklands.
- Retaining walls required in areas adjoining park entrance and car parks and picnic facilities may be required to fulfil other functions such as providing anchor points for signs, seats, lights and litter bins so as to reduce the clutter of separate items in the Parklands.

**Number of Elements likely to be required**
- Number and extent are unknown.

**Location/Setting**
- Prominent parts of the Parklands which will have high levels of use and where a higher standard of finish than gabion retaining walls is required.
- Areas potentially adjoining structures or parts of the urban core (such as the carnival site or Australian Avenue Promenade) where sharp detailing and a high level of finish is appropriate to the character of the setting.

**Level of Use**
- The extent of walling should generally be strictly limited in favour of design solution, which works with the natural landform rather than imposing retaining elements within the landscape.

**Access**
- The use of handrails should be minimised except where required for safety reasons.
3. Specific Requirements for Specific Elements

Parklands Design Consideration
- Materials or proprietary products chosen as possible attachments to wall structures should be robust with simple uncomplicated detailing.
- The design and placement of the walls should be understated and not be a feature within the landscape but be seen as an integral part of the landform which they are retaining.

Program Requirements
- A range of attachments and fixings for interpretive informants, displays, signage, temporary structures and art components may be required. Attachments should be grouped or kept to a minimum to avoid clutter and to maintain the visual integrity of the wall and the adjoining landscape.

Maintenance and Management Consideration
- Materials or products selected need to be adaptable to a number of applications so as to avoid a 'mish mash' solution.
- Retaining walls should be designed for a long life span as they are expensive to replace.
- Cleaning graffiti needs to be addressed with the application of a matt anti-graffiti membrane.

3.2 Steps and Ramps PLE2 and PLE3

Intended Function/Purpose
- Steps are to provide pedestrian access in areas of steep gradient where standard grades are not possible or desirable.
- Ramps are to provide pedestrian, cycle and disabled access where standard grades are not possible or desirable.

Number of Elements likely to be required
- Numbers or extent are unknown.

Location/Setting
3. **Specific Requirements for Specific Elements**

- Steps and ramps are likely to be required in numerous locations throughout the Parklands, where access opportunities are limited. However, steps and ramps should generally be limited in preference for solutions which work with the natural gradient and landform.
- In selected areas such as the Markers the use of steps or ramps may be used for deliberate effect and to provide a range of experiences and challenges.

**Level of Use**
- Stairs are for pedestrian use only.
- Ramps are to provide access for pedestrians, cyclist and disabled as necessary.

**Access**
- To comply with SOPA’s Access Strategies.
- To comply with AS 1428: ‘Design for Access and Mobility’.

**Parklands Design Consideration**
- Standard widths and grades are required for unified application throughout the park. The widths of the stairs and ramps should correspond to their designer’s purpose and should address the path hierarchies identified in the Concept Development Report (HASSELL 1998).
- Handrails, if required, should form part of a family of handrails used for other elements (refer to boardwalk balustrade and handrail details).
- Batters should have a maximum grade of 1:3 and retaining walls adjoining stairs and ramps should be neatly resolved with the junctions of materials and surfaces thought through.

**Programme Requirements**
- *No specific requirements.*

**Maintenance and Management Considerations**
- Ramp widths should be able to be varied to suit a range of applications and where necessary accommodate service vehicles when alternative access routes are not possible.
- Materials used for stairs and ramps should be hardwearing and not subject to constant erosion.
3. Specific Requirements for Specific Elements

3.3 Boardwalks

**Intended Function/Purpose**
- To provide pedestrian access through fresh and saltwater, wetlands enabling a deep appreciation of the lowlands.
- To provide a range of interpretive and educational experiences for Parklands uses.

**Number of Elements likely to be required**
- The use of boardwalks is to be kept to a minimum in order to reinforce the ‘natural’ quality of the wetlands.
- The Circulation and Facilities Plan for the Hill Road Corridor prepared by HASSELL (HASSELL 1998), as part of the concept development phase identifies up to six boardwalks in the freshwater zone to connect islands throughout the wetlands.
- The Circulation and Facilities Plan for the Haslams Creek and Brick Pit Precinct prepared by HASSELL (HASSELL 1998), as part of the concept development phase identifies two boardwalks in the Haslams Creek tidal wetlands.

**Location/Setting**
- Boardwalks within the freshwater wetlands are to be located down in the wetlands immediately above the water level so as to ensure the users immersion in the setting (max. 400mm above the permanent water level).
- Boardwalks within the saltwater wetlands are to be located within the mangrove root zone to interpret the tidal nature of the environment and located within the mangrove canopies at selected locations to provide a full appreciation of the wetland system. Two locations for boardwalks in the Haslams Creek Precinct identified as part of the Concept Development Phase as follows:
  - on the path route running along the northern banks of Haslams Creek between the 2SM channel inlet and the Holker Street busway. Opportunities exist at this location for views north along Haslams Creek towards Homebush Bay and to provide both floating and elevated sections of boardwalks;
  - on the accessibility path on the southern bank of Haslams Creek, west of the Eastern Water Quality Control Pond. Opportunities exist at this location for pontoon and elevated sections of boardwalk.
  - along the foreshore walk adjacent to the Parramatta River and Homebush Bay.
- Floating boardwalks currently exist in Bicentennial Park. The design of floating boardwalks for other parts of the Parklands does not form part of this commission.
3. Specific Requirements for Specific Elements

**Level of Use**
- Boardwalks are likely to be used by a broad section of the community for recreation and educational purposes.
- Boardwalks are particularly likely to be used by school and special interest groups for educational purposes and scientific endeavour.

**Access**
- In keeping with accessibility positive principles, timber decking boards will run perpendicular to the direction of travel with gaps between boards less than 13mm to accommodate wheelchair users.
- Generally all boardwalks are to be accessibility positive with a minimum width of 1800mm between kerbs to allow two wheel chairs to pass.
- Reference should be made to relevant Australian Standards for wheelchair users, (refer AS1428: 'Design for Access and Mobility').
- Kerbs should generally be used to constraint pedestrians, cyclists and wheelchairs. Kerb height to conform to requirements of AS 1428.1: 'Design for Access and Mobility'.

**Parklands Design Considerations**
- Boardwalks in the fresh water wetlands are to be designed close to the water’s surface. The wetlands have a linear quality and the design of the boardwalks should reflect this.
- Boardwalks are to be simple and unobtrusive in design and construction.
- Handrails and balustrades are to be kept to a minimum and used only where required for safety,
- At selected areas of environmental or scenic interest interpretive signs could be incorporated into broader sections of the boardwalk.
- Boardwalks are to be designed as angled straight runs contrasting to the rounded and more organic form of viewing platforms.

**Program Requirements**
- Opportunities for an interpretive art overlay exist at sensitive areas to or on a seasoned basis to enrich the visitors’ experience. The possibility of changeable ‘plug in’ elements (art/interpretive) component could be considered.

**Maintenance and Management Considerations**
3. Specific Requirements for Specific Elements

- Timber sizing, specification and fixing and fittings should be of a high standard appropriate to the corrosive nature of the marine environments in which the boardwalks will be located.
- Fixings and fittings and timber selection for boardwalks, viewing platforms and pedestrian foot bridges should be standardised to minimise the need to store a variety of tools and materials to undertake repairs and alterations.

3.4 Footbridges

**Intended Function/Purpose**
- Pedestrian cycle and disabled access across minor drainage channels, swales and depressions etc.
- Not intended for vehicular access.

**Number of elements likely to be required**
- Small number of foot bridges may be required throughout the parklands.

**Location and Setting**
- Foot bridges may be located in a variety of lowlands settings.
- Foot bridges should be set close to the ground or water level so as to minimise the visual presence of the structures and immerse visitors in the landscape setting.
- Setout and widths should be consistent with the Site Wide Circulation Strategy outlined in the Concept Development Report (HASSELL 1998).

**Access**
- Generally all foot bridges are to be accessibility positive with a minimum width of 1800m between kerbs to allow wheel chairs to pass.
- In keeping with accessibility positive principles, timber decking boards will run perpendicular to the direction of travel, with gap between boards less then 13mm, to accommodate wheel chair use.

**Parklands Design Consideration**
- Kerbs should generally be used to constraint pedestrians, cyclists and wheelchairs. Handrails should only be used where levels dictate their provision due to safety requirements.
3. Specific Requirements for Specific Elements

- Foot bridges are to be designed as part of the family of board walk and viewing platforms.

Program Requirements
- Not applicable

Maintenance and Management Considerations
- Timber sizing, specification and fixing and fittings should be of a high standard appropriate to the corrosive nature of the marine environments in which the foot bridges will be located.
- Fixings and fittings and timber selection for boardwalks, viewing platforms and pedestrian foot bridges should be standardised to minimise the need to store a variety of tools and materials to undertake repairs and alterations.

3.5 Viewing platforms

Intended Function/Purpose
- To provide viewing opportunities at designated scenic and selected environmentally sensitive areas enhancing the recreational and educational experience of visitors.
- To provide interpreter and educational information in areas of environmental and scenic interest.
- To provide destinations and stopping/rest points along pathways which pedestrians and cyclists may visit.

Number of elements likely to be required
- A large number of viewing platforms are likely to be required throughout the Parklands.

Location/Setting
- Viewing platforms are to be provided in a wide range of settings offering different viewing and interpretation opportunities.
- Viewing platforms are to vary in scale appropriate to the level of use and the setting.
3. Specific Requirements for Specific Elements

- Required in salt water wetlands along Haslams Creek providing a variety of wetland and creek views.
- Required around the brick pit rim to provide viewing access to the brick pit and its environs. Viewing opportunities have been identified at strategic locations around the rim in the Concept Development Plan, (HASSELL 1998).
- Selected viewing platforms around the brick pit will be elevated to provide enhanced views of the pit and opportunities to interpret the original forest species to be grown on the natural soils of the rim.
- Required adjoining boardwalk and elevated land adjoining the 2SM Wetland, the Hill Road Car park multi-use recreation area and Haslams Creek.
- Viewing platforms are required in select locations (ie. as terminators to adjoining streets) and to coincide with major activity nodes along the Parramatta and Homebush Bay foreshores (ie. RANAD wharf, Ferry Terminal and Point Park).

Level of Use

- The level of use will vary throughout the Parklands depending in location and programmed events.
- Viewing platforms adjoining the brick pit areas likely to be heavily used given their proximity to the urban core and the significant community interest and attraction to the brick pit. Small medium and large visitor groups may use these platforms.
- Viewing platforms along Haslams Creek and in Wetland areas are likely to receive a moderate level of use by individuals and small groups.

Access

- All viewing platforms should be designed to provide access for the aged and disabled in accordance with SOPA’s Access Strategies standards.
- Handrails will be mandatory in elevated situations.
- Viewing platforms should be connected directly to the path system.

Parklands Design Considerations

- Differentiated from boardwalks by form, being of curved shaped.
- At selected points viewing platforms may have stair or ramped access to provide higher canopy views through mangroves and forests.
- Handrails should be simple, light and elegant in character and be made of recycled hardwood, unfinished timber.
- Where appropriate interpretive information and or art overlays could be provided to enrich the visitors experience and help interpret the setting.
- Where possible interpretive information should be incorporated into the structure or handrails to minimise clutter and the need for additional elements.
3. **Specific Requirements for Specific Elements**

- Transparent galvanised steel mesh floors may be used to replace timber decking to enhance interpretive opportunities and user experience in special circumstances.

**Program Requirements**

- Seating may be required on selected viewing platforms which form destinations or which cater for large numbers of people.

**Maintenance and Management Considerations**

- Timber sizing, specification and fixing and fittings should be of a high standard appropriate to the corrosive nature of the marine environments in which the viewing platforms will be located.
- Fixings and fittings and timber selection for boardwalks, viewing platforms and pedestrian foot bridges should be standardised to minimise the need to store a variety of tools and materials to undertake repairs and alterations.

### 3.6 Picnic Shelters PLE7

**Intended Function/Purpose**

- Permanent picnic shelters are required at various locations throughout the Parklands to provide shade and shelter for picnic and barbecue groups and rest stops for Parkland’s users.
- The shelters may contain removable or permanent seats and tables depending on their location.
- The shelters should be capable of being adapted for programmed events and hired for commercial events.
- Structures of varying sizes may be required to accommodate large gatherings and events. This can be achieved by extending the modular unit of the picnic shelter to a maximum of four units, clustering or nesting of multiple structures or the design of specifically large structure.
- The addition of a rainwater collection tank (housed within an enclosure wall) allows the opportunity to provide water in remote parts of the Parklands where reticulated water supply is expensive. The use of such tanks demonstrates a commitment to ESD principles in the conservation and re-use of water resources.
3. **Specific Requirements for Specific Elements**

**Number of Elements likely to be required**
- The number of picnic shelters required may change throughout the life of the Parklands subject to programming requirements and the number of Parkland’s visitors.
- As an initial guide between two to three shelters may be required at minor multi-use areas, and between four to six required at the designated large mass picnicking areas.
- A total of between 10 to 20 picnic shelters may be required throughout the Parklands. Numbers are indicative only and will require further research in response to future user needs and requirements.

**Location / Setting**
Shelters would be located adjoining multi-use recreation areas and activity nodes where major servicing barbecues, public transport drop off points and car parking is provided.

Picnic shelters are likely to be provided in the following locations.
- Southern Haslams Creek multi-use area (Say 1 – 2 No).
- Hill Road car park mass picnic and multi-use area (Say 4 – 6 No).
- Marjorie Jackson Parkway multi-use area (Say 1 – 2 No).
- Bennelong Road electro-train station (Say 1 – 2 No).
- Point Park (Say 4-6 No).
- North Auburn picnic and multi-use area (Say 4-6 No).
- Silver Water park (Say 2-4 No).

**Level of Use**
- Shelters are to cater for a variety of group sizes from small individual groups (2 to 6) to larger extended family and community gatherings.
- Shelters should be designed in a manner, which may allow additional shelters to be added, or the existing shelters expanded to provide for larger gathering and programmed events.

**Access**
- The picnic shelters should provide access to all age groups and disabled persons.
- Shelters should generally be located adjoining public transport drop off points and car parks to provide ease of access for the disabled.
- Accessibility positive paths should be provided to all picnic shelters.
- Pavement surfaces (precast concrete pavers) beneath the structures should comply with SOPA’s Access Strategies.
3. **Specific Requirements for Specific Elements**

**Parklands Design Considerations**

- Structures should not dominate the landscape setting within which they are placed.
- While the structure must be part of a broader family of elements, some localised variation to reflect site constraints and the character of the environment in which they occur, should be considered to provide a deeper appreciation of the setting.
- Panels containing Parkland directional information, public displays, sponsorship, interpretive information or an art relevant to each shelter’s location and setting can be attached to or form part of enclosure wall units which can slot in between the shelters’ structure (refer to Enclosure Wall Unit). This will assist in centralising information around activity nodes and minimise the need of separate elements, which may otherwise clutter to parklands.
- The dimensions of the footings will need to be verified by a structural engineer for each individual application within the Parklands. This will be required to take account of varying ground conditions, slope, wind loading and the sizing of the structures. A dimension for the height of the connection plate has been provided to maintain visual consistency between structures.
- Drainage options for rainwater collected on shelter roofs will also need to be assessed for each individual application within the parklands. The three options are as follows:
  1. Pipe to nearest creek/ watercourse or storm water drainage system.
  2. Rainwater tanks to be used in remote areas where water supply may be difficult. Rainwater collection tank can be housed inside an enclosure wall unit (refer to Enclosure Wall/ Drink Station for details).
  3. Absorption trench in non-remediated ground and where distance prevents option one.
- A timber floor system as an alternative to concrete pavers may be used where the slope of the land requires a raised platform or where a special floor finish is required. NB. This is generally not a preferred option and should only be considered when there is no alternative location for the shelter.

**Program Requirements**

- Flexibility in design should be considered to expand, modulate or group structures to suit changing programme needs.
- Larger structures could be designed to cater for programmed events. Consider provision of lighting, power, water and removable seats and tables.
- A variety of wall types/forms may be introduced to provide shelter or privacy between shelters. Walls may also provide support/ and or enclosure for elements such as telephones, notice boards, hot water units, rainwater tanks, drink dispenser units.
3. Specific Requirements for Specific Elements

Maintenance and Management Considerations

- Potential exists to hire out shelters for commercial functions and to obtain corporate sponsorship. To maximise the opportunity power and water services should ideally be provided to structures. Selected larger structures should be designed to meet commercial functions and corporate sponsorship needs.

- Box gutters on shelter roofs will require gutter guards to prevent leaf litter build up. Gutters are to be stainless steel to ensure longevity. Regular maintenance will be required.
3. Specific Requirements for Specific Elements

3.7 Shade Structures

**Intended function/purposes**

- Two types of structures required – temporary and permanent.
- Temporary shade structures required for programmed events, displays, seasonal initiations and queuing areas.
- Short term and permanent shade structures required to provide shade and shelter during the initial stages of the Parklands establishment where there is little shade on site provided by trees. Some of these structures could be removed at a later date once adequate shade is provided by vegetation.
- All shade devices should be flexible structures which provides a design intent for future shade independent of use or program.

**Number of elements likely to be required**

- In the initial stages of the Parklands development a number of short term and permanent structures would be located within the park.
- Temporary structures would be provided on an as needed basis either by hire or from park management storage facilities. The likely numbers are unknown.

**Location/Setting**

- Short term and permanent structures may be located in the following areas subject to design development and program requirements:
  - adjacent to minor car parks;
  - as elements within activity nodes such as the Marjorie Jackson Parkway multi use area, Southern Haslams Creek multi use area, North Auburn recreation area, and the Hill Road car park picnic and multi use area.
- Temporary/movable shade structures would be located adjacent to venues for programmed events and in sensitive areas for specific events or seasonal displays.
- Structures should generally be located partly in open space areas and partly within the forested ‘walls’ so as to limit the visual impact of the structures of the setting.

**Level of Use**

- Temporary, short term and permanent structures should cater for small groups. For large events a number of temporary structures could be grouped together to provide shade for larger numbers of people. In this way the visual impact of large single structures within the Parklands can be mitigated.
3. **Specific Requirements for Specific Elements**

**Access**
- The shade structures should accommodate all age levels and the disabled. Permanent structures may require a hard pavement surface to comply with SOPA's Assess Strategies.

**Parklands Design Requirement**
- Pressure exists for shade structures to be located on the elevated landforms and Markers. Temporary structures in these areas for specific events should be considered. Permanent structures, which may compromise the experience of the setting, should be resisted.
- Permanent shade structures should be designed as part of the same family as picnic shelters, sharing a common structural and roofing system, which is flexible and able to be adapted to cater for a range of applications.
- The dimensions of footings will need to be verified by a structural engineer for each individual application within the Parklands. This will be required to take account of varying ground conditions, slope, wind loading and the sizing of the structures.
- Drainage options for rainwater collection on shelter roofs will also need to be addressed for each individual application within the Parklands. The three options are as follows:
  1. Pipe to nearest creek/ watercourse or storm water drainage system.
  2. Rainwater tanks to be used in remote areas where water supply may be difficult. The rainwater collection tank can be housed inside an enclosure unit (refer to Enclosure Wall detail)
  3. Absorption trench in non-remediated ground and where distance prevents option one.
- A timber floor system as an alternative to concrete pavers may be used where the slope of the land requires a raised platform or where a special floor finish is required. NB. This is generally not a preferred option and should only be considered when there is no alternative location for shelters.

**Program Requirements**
- Temporary structures required for programmed events and seasonal displays etc.
- Structure could be movable to suit activities taking place in various locations across the site.
### 3. Specific Requirements for Specific Elements

#### Maintenance and Management Consideration
- Structures ideally should provide both shade and shelter from the rain, especially in remote parts of the Parklands.
- Ability to be able to group temporary structures for large events.
- The hire of property shade/shelter structures may prove to be the most economically viable option for temporary structures. In this instance a standard specification and list of suppliers is required to ensure the consistent use of one type of structure across the site and that adequate numbers are available. Refer to Appendix A for the names of nominated suppliers and structure types.
- Box gutters will require gutter guards to prevent leaf litter build up. Gutters are to be stainless steel to ensure longevity. Regular maintenance will be required.

#### 3.8 Barbecues

**Intended Function/Purpose**
- To provide cooking facilities for small and large groups selected picnic areas within the parklands.

**Number of elements likely to be required**
- Two to four barbecue hot plates maybe provide within one barbecue facility to reduce the need of a number of separate structures.
- One to two barbecue structures may be required at minor picnic areas.
- Two to five barbecue structures may be required at the large designated mass picnic area of North Auburn, Hill Road car park multi use recreation areas and the Marjorie Jackson Parkway Multi use area.

**Location/Setting**
- Facility should be located in close proximity to other picnic facilities so that activity can be clustered on the edges of the multi use spaces so as not to alienate areas of open space.
- Locate within the forested ‘walls’ so as to provide shade and reduce the visual impact of the elements in the setting.

**Level of Use**
- Barbecues are likely to be used by couples, small groups, larges parties and corporate events.
3. **Specific Requirements for Specific Elements**

- Facilities should be designed in a manner which will facilitate their use by larger groups requiring several hot plates and which can also provide a level of comfort and separation for smaller groups.

**Access**
- Selected facilities should be designed to accommodate the disabled as well as able-bodied people.
- Appropriate hard surface paving should be provided adjoining barbecue facilities to provide access for the disabled and elderly so they can participate in the social interaction which usually occurs around these elements.

**Parklands Design Requirements**
- Materials and furnishes selected should form part of the simple and robust material pallet for Parklands.

**Program Requirements**
- Power, water and lighting should be provided to enhance the potential for programmed events and commercial use.

**Maintenance and Management Coordination**
- For large corporate or programmed events the hire of additional portable barbecues may prove to be more economically viable.
- Hard stand areas adjoining barbecues facilities should be considered to reduce the wear and tear on grass and planting areas.
- Planting areas that are likely to be trampled should be kept well away from barbecue facilities.
- Facilities should be designed for easy cleaning and removal of fat and grease deposits and grease traps.
- Opportunity may exist for corporate sponsorship of barbeques in the supply of gas or electricity.
- Wood-fire barbeques should not be provided due to potential bush fires and the likely environmental damage caused by people collecting fire wood.
3. Specific Requirements for Specific Elements

3.9 Enclosure Wall Unit / Drink Station

**Intended Function/Purpose**

- Multi-use enclosure wall units may be used to provide further functional extensions to the shelters with which they are associated, particularly in areas adjacent to car parks, activity nodes and in exposed or remote parts of the Parklands. The unit could be adapted to provide for an extensive range of amenities:
  - drink vending machines and bubblers
  - telephone
  - hot water unit
  - interpreter and directorial information
  - electrical switchboards
  - minor storage
  - rainwater storage

**Number of Elements Likely to be Required**

- The number of elements are unknown at this stage.

**Location/Setting**

- Potential locations include:
  - Minor car parks and public transport set down areas.
  - Foreshore walk
  - Silverwater and Mason Park
  - North Auburn multi use recreation area
  - Hill Road car park

**Level of Use**

- Permanent structure in areas of high use and activity, and in remote parks of the park where facilities are required.
- Short term and permanent structures are likely.

**Access**

- Structures should accommodate and facilitate access to all age levels and the disabled. Structures may require a hard pavement surface to comply with SOPA’s Access Strategies, (refer Shade structures/ Picnic shelters).
3. **Specific Requirements for Specific Elements**

**Parklands Design Requirements**
- The multi-use wall element should be designed to fit between the posts of shade structures and picnic shelters.

**Program Requirements**
- Short term structures required for programmed events and seasonal displays etc.

**Maintenance and Management Considerations**
- Fixtures and fittings such as telephones, drinking vending machines, seats, interpreting/directional information could be ‘plugged in’ as required.
- Provision of services makes shelters more likely to attract corporate sponsorship.
- Structures must be robust to withstand potential vandalism in remote parts of the Parklands.

3.10 **Small Vehicular Gate and Barrier** PLE11 and 12

**Intended Function/Purpose**
- To control vehicular access and illegal parking adjacent to venues, facilities and pathways throughout the Parklands.

**Number of elements likely to be required**
- Unknown

**Location of Setting**
- Gates and vehicular barriers will be required at various locations to control vehicular access to venues and facilities such as -
  - Sydney International Archery Park.
  - Maintenance vehicle access paths.
  - adjacent to verges and planted areas in the Parklands

**Level of Use**
- by maintenance and management personnel.
3. Specific Requirements for Specific Elements

Access
- provide access for maintenance vehicles and large trucks.

Parklands Design Requirements
- selected materials used should be consistent with the palette adopted for the Parklands.
- gates should not be visually obtrusive unless screening is specifically required.

Program Requirements
- gates should be able to accommodate large vehicles used to deliver hire equipment to venues.

Maintenance Requirements
- easy to lock and open
- flexibility to open in two directions to suit a range of applications.
- design that can be adopted to varying spans as may be required or function as double opening gate.
PERMANENT FROG FENCE
CONSTRUCTION AND
ASSOCIATED WORKS

Millennium Parkland
Homebush Bay

prepared for

Olympic Co-ordination Authority

Pittendrigh Shinkfield
& Bruce Pty Limited

Environmental Management

22 July 2000
PSB 00184
FENCING WORKS SPECIFICATION

SUBSECTION 1.00 GENERAL

1.01 PREAMBLE
GENERAL: The Sydney Organising Committee for the Olympic Games (SOCOG) is a corporation constituted by the SOCOG Act whose primary responsibility is to organise and stage the Sydney 2000 Olympic Games. Sydney Para-Olympic Organising Committee Limited (SPOC) is a corporation whose primary function is to organise and stage the 2000 Para-Olympic Games. The Olympic Co-ordination Authority (OCA) is an organisation constituted by the Olympic Co-Ordination Authority Act (1995) to provide, amongst other things, the permanent venues for the staging of the Games.

1.02 SCOPE
SPECIFIED IN THIS SECTION:
- Construction of new permanent frog fencing and associated vehicle and pedestrian gates;
- Repair of existing security fencing, and
- Addition of frog fencing to existing security fencing.

1.03 ORDERING
REQUIREMENT: Within 7 days of the date of acceptance of tender, furnish proof of ordering the required materials, and advise immediately if any supply difficulties are encountered. No extension of time will be granted if any material or product is not available because of late ordering.

1.04 INSPECTION
NOTICE: Give sufficient notice so that inspection may be made of the following:
Fencing Works:
- Set out of all fencing and gates;
- First strained section of permanent frog fence complete;
- First strained section of attached frog fence to existing security fence complete;
- Test panel for repair of existing security fence complete;
- Completion of first vehicle access gate;
- Completion of first pedestrian access gate;
- Permanent frog fence @ 25% complete;
- Repair of existing security fence @ 25% complete;
- Attachment of frog fence to existing security fence @ 25% complete;
- Permanent frog fence @ 100% complete;
- Repair of existing security fence @ 100% complete;
- Attachment of frog fence to existing security fence @ 100% complete;
- Prior to Practical Completion, and
- Prior to completion of Defects Liability Period.
Minimum notice required: Forty-eight (48) hours.

1.05 EXAMPLE FENCING
Examples of existing frog fencing available for inspection as follows:
- Permanent Frog Fencing: Corner of Australia Avenue and Marjorie Jackson Parkway, and
- Attachment of Frog Fencing to Existing Security Fencing: Corner of Marjorie Jackson Parkway and Bennelong Road.

1.06 PROGRAM
REQUIREMENT: Submit the following as a minimum two (2) weeks prior commencement of work for approval of Superintendent:
- A work program in the form of a bar chart.
SUBSECTION 2.00 SITE MANAGEMENT WORKS

2.01 FROG CLEARANCE

BACKGROUND: The Green and Golden Bell Frog (the Frog) is listed as an endangered species on Schedule 1 of the Threatened Species Conservation Act 1995. The areas where these works will be undertaken are key habitat areas for the Frog at Homebush Bay, the population comprising one of the most significant remnant populations of the species remaining. The site is considered important to the continued survival of the species.

The management of the areas where the works herein specified will be undertaken are governed by the Threatened Species Conservation Act 1995, National Parks and Wildlife Act 1974 and Protection of the Environment (Operations) Act 1997. Consent for the undertaking of this project is conditional upon the implementation of management practices which will protect the Frog. Persons acting in breach of the legislation could be subject to prosecution.

REQUIREMENT: All areas in which fencing works are to take place are to be deemed clear of the Frog by Australian Museum Business Services (AMBS) during the contract. The Superintendent is responsible for engaging AMBS, and all liaison with AMBS is to be through the Superintendent. AMBS must be given 48 hours notice before they are required on site for any clearance works.

The extent of Frog clearance required is dependent upon a number of factors including the density of groundcover within the area of the works. Typically, Frog clearance for the works is likely to comprise:
- AMBS to check position of marked fence lines prior to construction;
- AMBS to undertake preliminary frog search after fence line is marked out, prior to erection of new fences, and
- Fencing may need to be removed / installed by hand to minimise potential impact upon frogs to critical areas specified by the Superintendent.
SUBSECTION 3.00 FENCES

3.01 TREATMENT TYPES

SCHEDULE OF FENCING TREATMENT TYPES:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Permanent Frog Fence</td>
<td>As specified by Superintendent.</td>
</tr>
<tr>
<td></td>
<td>As specified in below PERMANENT FROG FENCE clause</td>
<td></td>
</tr>
<tr>
<td>Type 2</td>
<td>Attachment of Permanent Frog Fencing to Existing Security Fence</td>
<td>As specified by Superintendent.</td>
</tr>
<tr>
<td></td>
<td>As specified ATTACHMENT OF PERMANENT FROG FENCING TO EXISTING SECURITY FENCE clause</td>
<td></td>
</tr>
<tr>
<td>Type 3</td>
<td>Repair of Existing Security Fence with Addition of New Frog Fence</td>
<td>As specified by Superintendent.</td>
</tr>
<tr>
<td></td>
<td>Repair existing security fencing to match a marked sample. Where existing frog fencing is attached to this, remove it and replace with new material as described below in PERMANENT FROG FENCE clause</td>
<td></td>
</tr>
</tbody>
</table>

Note: Any existing temporary frog fences are to be removed upon completion of the fencing works under this contract.

3.02 PERMANENT FROG FENCE

REQUIREMENT: Construct 1200mm high permanent frog fencing and gates as per this specification and the attached drawings, to locations directed by the Superintendent. Fence to be of taut, neat and tidy appearance.

STRAINER POSTS: To be 60mm OD galv. pipe set in concrete footing, braced by 42mm OD galv. pipe diagonal stays set into concrete footings. Post to be capped with galv. steel cap fitting. Stay pipes to be attached to strainer post with clamp fitting and diagonally span 3000mm to star picket post plus allow min. 500mm for concrete footing. Attach 42mm OD pipe strut with T-clamp fitting to top of strainer post and project perpendicular as shown on drawings. Attach purpose made galv. cap with welded 10mm gauge, 20mm OD galv. cable hook attachment. Drill caps to both ends of strut as shown on drawings to nominal 6mm dia., or sufficient to ensure no impedance to straining of wire.

FENCING WIRE: Install 3 strands of 2.8mm galv. high tensile fencing wire to top, bottom and centre of fence, one strand to each end of the strut and one strand through the hook, as shown on the drawings. Strain wire to manufacturers recommended tensioning rate (Note: Tension wire off strut hook appropriately to suit strength of unit).

PERMANENT WIRE STRAINERS: Provide permanent wire strainers off strainer posts for all 6 wires. Strainer to be equal or similar to Hayes Permanent Wire Strainer (Catalogue No. 302). On short strains use one strainer on each wire and on long strains of say 300m to 500m, attach one strainer to each wire midway between strainer posts.

RINGLOCK FENCING: Attach Ringlock steel mesh fencing with openings approximately 300mm wide with increasing distances from top between strands as follows: 135mm, 150mm, 175mm, 225mm, 300mm, and wire fix to all 3 high tensile wires attached to the fence as shown on the drawings.
SHADE CLOTH: Excavate a trench 80mm wide and 180mm deep along line of posts. Fasten 75-80% density black shade cloth to the fencing wire using tie wire, and extend it 180mm into trench and 80mm across the base of the trench. Shade cloth to be equal or similar to Hortshade Heavy Knitted Shade Cloth. The height of the fence and attached fabric to be 1200mm. Stretch the shade cloth taut across the top fence fencing wire to the top strut wire and down to the bottom strut wire. Cut shade cloth from a continuous roll to avoid the use of joints. When joints are necessary, splice the filter cloth at a post, with a minimum 150mm overlap, and securely fasten both ends to post. Shade cloth is to present as a neat, taut finish with a strongly defined flat top with the exception of small neat protrusions where it drapes over the tops of the posts. Allow sufficient shade cloth to facilitate where it drapes over the posts.

BACKFILLING: Backfill trench over toe of fabric and compact soil.

3.03 ATTACHMENT OF FROG FENCE TO EXISTING SECURITY FENCE

REQUIREMENT: Construct 1200mm high attached frog fencing to existing security fencing and gates as per this specification and the attached drawings, to locations directed by the Superintendent. Fence to be of taut, neat and tidy appearance.

CLAMP / STRUT ATTACHMENTS: Attach 34mm OD pipe strut with clamp fitting to post and project perpendicular as shown on drawings. Weld hex. head nut to strut and purpose made galv. cap with welded hex. head nut and 7mm gauge, 20mm OD galv. cable hook attachment as per the drawings. Hex. Head nuts to have large enough opening to facilitate unimpeded straining of wire through them.

FENCING WIRE: Install 3 strands of 2.8mm galv. high tensile fencing wire to hex. Head nuts and through hook as shown on the drawings. Strain wire to manufacturers recommended tensioning rate (Note: Tension wire off strut hook appropriately to suit strength of unit).

PERMANENT WIRE STRAINERS: Provide permanent wire strainers off strainer posts for all 3 wires. Strainer to be equal or similar to Hayes Permanent Wire Strainer (Catalogue No. 302). On short strains use one strainer on each wire and on long strains of say 300m to 500m, attach one strainer to each wire midway between strainer posts.

SHADE CLOTH: Excavate a trench 80mm wide and 180mm deep along line of posts. Fasten 75-80% density black shade cloth to the existing middle and bottom fencing wire and the chain mesh using tie wire, and extend it 180mm into trench and 80mm across the base of the trench. Shade cloth to be equal or similar to Hortshade Heavy Knitted Shade Cloth. The height of the fence and attached fabric to be 1200mm. Attach black heavy duty material gaffer tape to the shade cloth and pierce as shown on the drawings. Extend the shade cloth over the hex. Had closest to the post, and insert and strain a wire through the nut. Stretch the shade cloth so that it snugly passes through the hook and nut assembly and place and strain 2 wires through the nut and hook. Stretch the fabric down to the hook wire, double over and tie-off at 300mm centres. Cut shade cloth from a continuous roll to avoid the use of joints. When joints are necessary, splice the filter cloth at a post, with a minimum 150mm overlap, and securely fasten both ends to post. Shade cloth is to present as a neat, taut finish with a strongly defined flat top.

BACKFILLING: Backfill trench over toe of fabric and compact soil.

GATES: Where attached frog fencing is to be attached to existing gates, attach as per SECTION 3.04 - GATES.

3.04 GATES

REQUIREMENT: To position nominated by Superintendent, provide hinged galv. pipe gates fitted with corrosion resistant hinges ensuring smooth operation and gate latch.

HAND ACCESS: Where required, provide hand holes to give access from outside to reach locking provision. Hand access holes must have sealing mechanism such as a flap and velcro strip to preclude Frog access.

VEHICULAR GATES: To be nominally 1200mm high x 3000mm wide galvanised steel pipe gate, equal or similar in form to ‘Cyclone’ Field Gate, attached to min. 60mm OD galv strainer posts either side as shown on the drawings. Gate to have projecting strut with wires off top rail, and have Ring-lock and shade cloth attached, all generally as per PERMANENT FROG FENCING. To prevent Frogs passing under gate, extend shade cloth 500mm beyond the bottom of the gate so that the overlap lies on the road surface. When gate is closed lie overlap flat on road and secure in position by sewing a heavy chain along the length of the gap.
flap. Ensure flush finish between the gate and gate post such that frog access is not possible through this opening, when gate closed. To prevent Frog access through the hinged edge of the gate, run a continuous length of shade cloth from the fence onto the gate along the hinge edge with sufficient slack at the hinge line to enable full opening and closing of gate.

PEDESTRIAN GATES: To be a 1200mm high x 900mm wide galv. steel pipe gate, generally constructed as per vehicular gate above.

3.05 REPAIR OF EXISTING SECURITY FENCING
REQUIREMENT: Repair existing security fencing to match a nominated sample, to be marked by the Superintendent, and as identified during the tender site inspection. All posts are to be straight and vertical. If existing fence has barbed wire top, replace to match, including provision for curved top to pole if required. Any existing attached frog fencing fabric is to be removed and replaced with new material. The repaired work is to be exhibit a neat and tidy appearance.
SUBSECTION 4.00 ESTABLISHMENT

4.01 SCOPE
GENERALLY: Establishment of all works executed under this contract shall include the following items as a minimum. The contractor shall maintain the contract areas for a set period after the date of Practical Completion, with any maintenance of the works prior to the date of Practical Completion not to be included as part of this period.

PRACTICAL COMPLETION: Practical Completion of all works shall include, but not be limited to the installation and repair of all specified fencing.
DEFECTS LIABILITY PERIOD: The contractor shall be liable for defects for all works undertaken within this contract for a period of 52 weeks to run after the date of Practical Completion. Final inspection will include requirement for checking of tensioning to all fences, and adjustment as required to meet specified tensioning rate.
INSURANCE: The contractor is to ensure suitable insurance cover is in place for the theft and/or damage of all works executed under this Contract during the Defects Liability Periods.

4.02 URGENT MAINTENANCE WORKS
REQUIREMENT: Notwithstanding anything to the contrary of the Contract, the Superintendent may instruct the contractor to perform urgent maintenance works. Should the contractor fail to carry out the work within seven days of such notice, the Superintendent reserves the right to employ others to carry out such urgent and specified work and charge it to the contractor.

...........................................
Mark Blanche
Flag Specification
Flag-pole Banner
Halyard fixing system with multiple fixing points

Refer to the attached sketch for a graphical representation of the flag specification.

1. Overall finished dimension of the banner is 4.0m x 1.2m.
   1.1 **NB:** The finished banner dimension does not allow for the additional material required for the hems along the edges of the banner.

2. The banner shall be made from woven polyester (bunting) unless otherwise stated.

3. Low stretch flag cord (or an approved equivalent material) shall be sewn down the entire length of the spine of the banner and encapsulated in the hem.
   3.1 At the top and bottom ends of the banner the low stretch flag cord shall be stitched back on itself to form a 20mm loop. A standard sister clip shall be sewn into this loop

4. Additional loops (3 off) shall be sewn into the spine of the banner at 1 metre intervals. A 60mm nylon clip shall be incorporated into each of these loops.

5. All graphical artwork or text shall be considered and approved by the Authority. Prior to manufacture the Authority shall be provided with a sample layout or mock-up of the intended design for approval.

6. All banners shall be manufactured to a finish acceptable to the Authority. Frayed edges, large dimensional discrepancies, substandard stitching or printing, are all unacceptable and will result in the banner being rejected
Flag Specification
Flag-pole Banner
Halyard fixing system with multiple fixing points

For flag pole types; 9 metre and 15 metre

Overall banner dimensions: **4.0 metres x 1.2 metres**
Flag Specification
Standard Flags
Halyard fixing system

Refer to the attached sketch for a graphical representation of the flag specification.

1. Overall finished dimension of the flag is 3.0 yards x 1.5 yards.
   1.1 **NB:** The finished flag dimension does not allow for the additional material required for the hems along the edges of the banner.

2. The flag shall be made from woven polyester (bunting) unless otherwise stated.

3. Low stretch flag cord (or an approved equivalent material) shall be sewn down the entire length of the spine of the flag and encapsulated in the hem.
   3.1 At the top and bottom ends of the flag the low stretch flag cord shall be stitched back on itself to form a 20mm loop. A standard sister clip shall be sewn into this loop

4. All graphical artwork or text shall be considered and approved by the Authority

5. Prior to manufacture the Authority shall be provided with a sample layout or mock-up of the intended design for approval.

6. All flags shall be manufactured to a finish acceptable to the Authority. Frayed edges, large dimensional discrepancies, substandard stitching or printing, are all unacceptable and will result in the flag being rejected.
Flag Specification
Standard Flags
Halyard fixing system

For flag pole types; 9 metre and 15 metre

Overall flag dimensions: 3 yards x 1.5 yards
Design Strategy Summary

- Combination of shared ways, footpaths and boardwalks
- Major mixed-traffic thoroughfares
- Nodes and lookouts along travel routes
- Items for highlight within buffer zones and along routes
- Mixed use areas and public facilities
- Protected nature reserve areas
The following elements are to be considered within this precinct:

- **Shared Cycleways**
- **Footpaths**
- **Boardwalks**
- **Nodes**
- **Viewing Platforms**
- **Icons/Signage**
- **Markers**
- **Features of Interest**
- **Leisure Amenities**
- **Sports Facilities**
- **Site Services**
- **Protected Areas**
- **AV Program**
- **Special**

**Example Palette**

**type #PL1**

**description**

POST-TOP LUMINAIRE WITH REAR CUT-OFF PLATE AND INTERNAL GLARE CONTROL. CUSTOM SOLAR COLLECTOR POSSIBLE.

**employment**

MOUNTED TO ONE SIDE OF THE CYCLEWAY AT EQUAL INTERVALS.

**type #PL2**

**description**

600MM HIGH BOLLARD WITH RECESSED COMPACT FLUORESCENT LAMP.

**employment**

FOOTPATH MARKERS AND LOOKOUT ILLUMINATION UNDER PIR CONTROL. LUMINAIREs SET TO STAND-BY MODE WHEN NO-ONE PRESENT.

**type #PL3**

**description**

SEALED LINEAR ILLUMINATING UNIT. EXTERNALLY TRANSFORMED

**employment**

RECESSED WITHIN BOARDWALK KERB AND ACTIVATED VIA PIR TRIGGER.
type #PL8

description
LINEAR T5 ADJUSTABLE FLUORESCENT LUMINAIRE. WEATHERPROOF.

employment
LINEAR DOWNLIGHTING ELEMENT FOR LOCAL SIGNAGE.

type #PL5

description
IN-GROUND LED LUMINAIRE WITH CUSTOM FROSTED GLASS DEPICTING EITHER N, S, E OR W.

employment
LUMINAIRES ARRANGED SO AS TO REPRESENT 4 POINTS OF THE COMPASS IN THE GROUND AT A CENTRAL LOCATION WITHIN THE NODE OR LOOKOUT.

type #PL4

description
POLE TYPE LUMINAIRE WITH SIDE-LIGHT PANELS

employment
LUMINAIRE PLACED AT EDGE OF NODE PROVIDING DIFFUSE CIRCLE OF ILLUMINATION AND GUIDING POINT.

type #PL10 + 11

description
POST-TOP LUMINAIRE WITH REAR CUT OFF PLATE AND INTERNAL GLARE CONTROL. FORWARD THROW FOR AREA LIGHTING.

employment
MOUNTED TO PROVIDE SUITABLE ILLUMINATION FOR FACILITIES AND SERVICES AREAS.
**Design Strategy Summary**

- Fragile environment
- Absolute minimal use of light
- 600mm high concrete bollard luminaires for access pathways only (Type PL2).
- PIR activation to bollards
- Bollards dim to 20% in stand-by state
- Compact fluorescent 3000K
- C-bus or time clock control to pathways
The following elements are to be considered within this precinct:

- Shared Cycleways
- Icons/Signage
- Features of Interest
- Footpaths
- Markers
- Protected Areas
- Boardwalks
- Leisure Amenities
- AV Program
- Nodes
- Sports Facilities
- Special
- Viewing Platforms
- Site Services
- Other

Example Palette

**type #PL2**

**description**

600MM HIGH BOLLARD WITH RECESSED COMPACT FLUORESCENT LAMP.

**employment**

FOOTPATH MARKERS AND LOOK-OUT ILLUMINATION UNDER PIR CONTROL. LUMINAIRES SET TO STAND-BY MODE WHEN NO-ONE PRESENT.

**type #PL7**

**description**

SELF-CONTAINED WEATHERPROOF AND VANDAL-RESISTENT AV CONTROL BOLLARD RESPONDING TO TOUCH.

**employment**

INTERACTIVE AUDIO-VISUAL CONTROL FOR LOCAL LIGHTING AND AUDIO PROGRAM.

**type #PL8**

**description**

LINEAR ADJUSTABLE FLUORESCENT LUMINAIRE. WEATHERPROOF.

**employment**

LINEAR DOWNLIGHTING ELEMENT FOR LOCAL SIGNAGE.
Design Strategy Summary

- Combination of shared ways, footpaths and boardwalks
- Major mixed-traffic thoroughfares
- Nodes and lookouts along travel routes
- Items for highlight within buffer zones and along routes
- Sensitive environment to consider
- Mixed use areas and public facilities
The following elements are to be considered within this precinct:

- Shared Cycleways
- Icons/Signage
- Features of Interest
- Footpaths
- Markers
- Protected Areas
- Boardwalks
- Leisure Amenities
- AV Program
- Nodes
- Sports Facilities
- Special
- Viewing Platforms
- Site Services

Example Palette

**type #PL1**

description
POST-TOP LUMINAIRE WITH REAR CUT OFF PLATE AND INTERNAL GLARE CONTROL. CUSTOM SOLAR COLLECTOR POSSIBLE. SIDE THROW FOR PATHWAY LIGHTING

employment
MOUNTED TO ONE SIDE OF THE CYCLEWAY AT EQUAL INTERVALS.

**type #PL2**

description
600MM HIGH BOLLARD WITH RECESSED COMPACT FLUORESCENT LAMP.

employment
FOOTPATH MARKERS AND LOOK-OUT ILLUMINATION UNDER PIR CONTROL. LUMINAIRE SET TO STAND-BY MODE WHEN NO-ONE PRESENT.

**type #PL3**

description
SEALED LINEAR LIGHTING UNIT. EXTERNALLY TRANSFORMED

employment
RECESSED WITHIN BOARDWALK KERB AND ACTIVATED VIA PIR TRIGGER.
HASLAM’S CREEK

continued

**type #PL5**

**description**
IN-GROUND LED LUMINAIRE WITH CUSTOM FROSTED GLASS DEPICTING EITHER N, S, E OR W.

**employment**
LUMINAIRE ARRANGED SO AS TO REPRESENT 4 POINTS OF THE COMPASS IN THE GROUND AT A CENTRAL LOCATION WITHIN THE NODE OR LOOKOUT.

**type #PL8**

**description**
LINEAR T5 ADJUSTABLE FLUORESCENT LUMINAIRE. WEATHERPROOF.

**employment**
LINEAR DOWNLIGHTING ELEMENT FOR LOCAL SIGNAGE

**type #PL14**

**description**
YOKE MOUNTED HALOGEN FLOODLIGHT WITH INTEGRAL FILTER. BEAM SPREAD TBD.

**employment**
LLUMINATION OF SPECIFIC LANDSCAPE FEATURES UNDER INTERACTIVE DIMMER CONTROL.
**Design Strategy Summary**

- Major mixed-traffic thoroughfares
- Primary recreational thoroughfare
- Nodes and lookouts within precinct
- Areas of interest to highlight along route and within buffer zones
The following elements are to be considered within this precinct:

- Shared Cycleways
- Icons/Signage
- Features of Interest
- Footpaths
- Markers
- Protected Areas
- Boardwalks
- Leisure Amenities
- AV Program
- Nodes
- Sports Facilities
- Special
- Viewing Platforms
- Site Services

Example Palette

**Type #PL1**
**Description:**
POST-TOP LUMINAIRE WITH REAR CUT-OFF PLATE AND INTERNAL GLARE CONTROL. CUSTOM SOLAR COLLECTOR POSSIBLE.

**Employment:**
Mounted to one side of the cycleway at equal intervals.

**Type #PL2**
**Description:**
600MM HIGH BOLLARD WITH RECESSED COMPACT FLUORESCENT LAMP.

**Employment:**
Look-out illumination under PIR Control. Luminaires set to standby mode when no-one present.

**Type #PL4**
**Description:**
POLE TYPE LUMINAIRE WITH SIDE-LIGHT PANELS

**Employment:**
Luminaire placed at edge of node providing diffuse circle of illumination and guiding point.
type #PL5

description
IN-GROUND LED LUMINAIRE WITH CUSTOM FROSTED GLASS DEPICTING EITHER N, S, E OR W.

employment
LUMINAIRE ARRANGED SO AS TO REPRESENT 4 POINTS OF THE COMPASS IN THE GROUND AT A CENTRAL LOCATION WITHIN THE NODE OR LOOKOUT.

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type #PL8

description
LINEAR T5 ADJUSTABLE FLUORESCENT LUMINAIRE. WEATHERPROOF.

employment
LINEAR DOWNLIGHTING ELEMENT FOR LOCAL SIGNAGE

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type #PL14

description
YOKE MOUNTED HALOGEN FLOODLIGHT WITH INTEGRAL FILTER. BEAM SPREAD TBD.

employment
ILLUMINATION OF SPECIFIC LANDSCAPE FEATURES UNDER INTERACTIVE DIMMER CONTROL.

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type #PL14

description
YOKE MOUNTED HALOGEN FLOODLIGHT WITH INTEGRAL FILTER. BEAM SPREAD TBD.

employment
ILLUMINATION OF SPECIFIC LANDSCAPE FEATURES UNDER INTERACTIVE DIMMER CONTROL.
**Design Strategy Summary**

- Coloured light
- Halogen & Par lamps
- Wash light luminaires (Types PL14).
- Narrow spot lights (Types PL14)
- Interior Luminaire (Type PL6)
- Cranes to be permanently lit (Type PL15)
- Touch tell controlled (Type PL7)
- Choreographed sequences
The following elements are to be considered within this precinct:

- Shared Cycleways
- Icons/Signage
- Features of Interest
- Footpaths
- Markers
- Protected Areas
- Boardwalks
- Leisure Amenities
- AV Program
- Nodes
- Sports Facilities
- Special
- Viewing Platforms
- Site Services

Example Palette

type #MP7

description
SELF-CONTAINED WEATHERPROOF AND VANDAL-RESISTENT AV CONTROL BOLLARD RESPONDING TO TOUCH

employment
INTERACTIVE AUDIO-VISUAL CONTROL FOR LOCAL LIGHTING AND AUDIO PROGRAM.

type #MP8

description
LINEAR T5 ADJUSTABLE FLUORESCENT LUMINAIRE. WEATHERPROOF.

employment
LINEAR DOWNLIGHTING ELEMENT FOR LOCAL SIGNAGE

type #MP14 + 15

description
YOKE MOUNTED HALOGEN & HID FLOODLIGHT WITH INTEGRAL FILTER. BEAM SPREAD TBD.

employment
ILLUMINATION OF BUILDINGS [HALOGEN UNDER INTERACTIVE CONTROL] AND CRANES [HID PERMANENTLY ON.]
### Design Strategy Summary

- Low bollard luminaires for access pathways (Type PL13).
- 16m spacings between type PL13
- Compact fluorescent 3000K
- C-bus or time clock control
- LED compass luminaires on summit
- Orchestrated turning-on sequence
The following elements are to be considered within this precinct:

- Shared Cycleways
- Icons/Signage
- Features of Interest
- Footpaths
- Markers
- Protected Areas
- Boardwalks
- Leisure Amenities
- AV Program
- Nodes
- Sports Facilities
- Special
- Viewing Platforms
- Site Services

**Lighting Fixture Palette**

**type #PL13**

*description*
300MM SQUARE BOLLARD WITH RECESSED COMPACT FLUORESCENT LAMP.

*employment*
LUMINAIRE PLACED AT 16M CENTRES ALONG OUTSIDE EDGE OF ACCESS PATHWAY TO ILLUMINATE ROUTE AND GABION WALL.

**type #PL5**

*description*
GROUND LED LUMINAIRE WITH CUSTOM FROSTED GLASS DEPICTING EITHER N, S, E OR W.

*employment*
LUMINAIRE ARRANGED SO AS TO REPRESENT 4 POINTS OF THE COMPASS IN THE GROUND AT A CENTRAL LOCATION ON THE SUMMIT.

**type #PL7**

*description*
SELF-CONTAINED WEATHERPROOF AND VANDAL-RESISTENT AV CONTROL BOLLARD RESPONDING TO TOUCH.

*employment*
INTERACTIVE AUDIO-VISUAL CONTROL FOR LOCAL LIGHTING AND AUDIO PROGRAM.
Design Strategy Summary

- Precise control over sports floodlighting
- Precise luminaire optics
- Mast mounted Sports Lights (Types PL16)
- Minimum lighting levels for sporting requirements
- Multi level switching (25%, 50%, 75%)
- Minimum fixture impact during daylight
- C-bus controlled
The following elements are to be considered within this precinct:

- Shared Cycleways
- Icons/Signage
- Features of Interest
- Footpaths
- Markers
- Protected Areas
- Boardwalks
- Leisure Amenities
- AV Program
- Nodes
- Sports Facilities
- Special
- Viewing Platforms
- Site Services

Example Palette

**type** #MP10 + 11
**description**
POST-TOP LUMINAIRE WITH REAR CUT OFF PLATE AND INTERNAL GLARE CONTROL. FORWARD THROW DISTRIBUTION FOR AREA LIGHTING

**employment**
MOUNTED TO PROVIDE AREA FLOODLIGHTING FOR SERVICES AND AMENITY AREAS

**type** #MP16
**description**
MAST MOUNTED SPORTS FLOODLIGHT WITH FULL GLARE CONTROL LOUVRES.

**employment**
MAST MOUNTED TO PROVIDE ADEQUATE ILLUMINATION TO SPORTS FIELDS WHILST STRICTLY CONTROLLING SPILL LIGHT.