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SECTION 1
INTRODUCTION
1.1 INTRODUCTION

Techport Australia, Australia’s premier naval industry hub, is being developed at Osborne in South Australia.

Techport Australia will bring together a critical mass of warship design, systems integration and construction skills rivalling anything across the globe and will feature:

- world-class common user shipbuilding infrastructure
- a 35+ hectare fully integrated industrial precinct for suppliers
- an on site Maritime Skills Centre, delivering trade and technical skills for a job-ready workforce
- a purpose-built state of the art Air Warfare Destroyer Systems Centre
- access to the national transport network including heavy/wide load roads, a rail spur and deep channel international port, and
- an optical fibre network link to major research, defence and education sites across South Australia.

Only 20 minutes from Adelaide’s central business district and 15 minutes from the new international airport, it is at the heart of South Australia’s busiest port.

1.1.1 COMMITMENT TO TECHPORT AUSTRALIA

Defence SA is Techport Australia’s owner, developer and facilities manager.

The multi-billion dollar defence investment program currently under way has provided the opportunity to create a fully integrated and master planned estate that will be home to a broad range of naval and defence related service businesses, supporting current defence programs and positioning for future growth.

In order to secure future benefits and generate investment appeal, the supplier precinct has been designed for the future. The precinct incorporates best practice planning and sustainability principles.
1.2 PURPOSE OF DEVELOPMENT GUIDELINES

1.2.1 PURPOSE

Development Guidelines have been established by Defence SA to create a coherent vision for the built-form and landscape character of Techport Australia.

The Development Guidelines consist of two parts:

- Urban Design Guidelines
- Ecologically Sustainable Development Guidelines

The purpose of the Urban Design Guidelines is to:

- ensure that a consistently high standard of construction and presentation is achieved, and
- clearly articulate the design principles established by Defence SA, the Development Assessment Commission and the Port Adelaide Enfield Council.

The purpose of the Ecologically Sustainable Development Guidelines is to:

- inform all stakeholders about the ecologically sustainable development principles and practices that guide the development of Techport Australia and Defence SA land holdings
- outline current environmental policies, plans and systems
- detail the fundamental design elements for ecologically sustainable development
- encourage ecologically sustainable development within the precinct, and
- contribute towards the achievement of targets ‘attaining sustainability’ in South Australia’s Strategic Plan.
1.2.2 ENCUMBRANCE

When you purchase an allotment within Techport Australia an encumbrance will be registered upon the Certificate of Title. The encumbrance requires the implementation of the Development Guidelines.

The encumbrance restricts the following activities without prior written approval by Defence SA and, where necessary, the Development Assessment Commission and Port Adelaide Enfield Council:

- commencement of construction prior to approval of building plans
- substantial variation to plans or construction materials
- erection of signs on the property
- subdivision of land
- assignment, leasing or sub-leasing of land, and
- sell any land or any part thereof.

The approval process will consist of three steps:

1. Defence SA approval based on assessment against the Urban Design Guidelines and the Ecologically Sustainable Development Guidelines
2. Development Assessment Commission planning approval, and
3. Building approval by either a Private Certifier or the Port Adelaide Enfield Council.

1.2.3 HOW THE GUIDELINES APPLY

All development at Techport Australia will be assessed against the Development Guidelines which comprise of the Urban Design Guidelines and the Ecologically Sustainable Development Guidelines.

If applicants are unsure of whether or not their proposed development meets the requirements of the Guidelines, a sketch plan or concept should be submitted to the Project Manager for preliminary discussion prior to finalising drawings and specifications for formal lodgement with Defence SA. This preliminary step is intended to streamline the approval process and avoid additional costly design work.

In assessing applications relative to the Development Guidelines, Defence SA may in its discretion approve proposals that do not conform absolutely to the Guidelines provided that:

- the Development Assessment Commission and the Port Adelaide Enfield Council consent to the variations, and
- that the variations are minor and that the quality, character and sustainability of the development is not impacted.

1.2.4 SUBMISSION REQUIREMENTS

The table below describes the submission requirements:

<table>
<thead>
<tr>
<th></th>
<th>Commercial/Office</th>
<th>Industrial Development</th>
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</thead>
<tbody>
<tr>
<td>Urban Design Guidelines</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ESD - Commercial/Office</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ESD - Industrial Development</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>ESD - Innovation</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Applicants must provide Defence SA four (4) full sets of the following documents:

- development submission response (refer appendix B)
- site plan, including site and building levels
- elevations and floor plans
- roof plans (including proposed plant)
- schedule of external materials
- landscape plan and planting schedule
- signage plan
- fencing and security plans
- car parking, circulation, access and egress plans, and
- stormwater management and earthworks plan.

All applications or enquiries should be forwarded to:

The Project Manager
Defence SA
Ground Floor
99 Frome Street
ADELAIDE SA 5000
Ph: 08 8463 7140
admin@defencesa.com

1.2.5 APPROVAL PROCESS

Approval of plans by Defence SA in no way constitutes a planning or building approval from the Port Adelaide Enfield Council or the Development Assessment Commission or any other authority.

Following assessment and approval (three full sets of the plans will be “stamped” and returned to the applicant and one set retained by Defence SA), applicants are then required to lodge the following documentation with Port Adelaide Enfield Council to receive planning approval pursuant to the Development Act:

- approved Defence SA “stamped” plans and any supporting documentation (three copies)
- a Development Application Form for planning approval, and
- the relevant application fee.


Development Assessment Commission will assess the application against the Port Adelaide Enfield City Development Plan.

Under no circumstances should plans be forwarded to Port Adelaide Enfield Council prior to them having received approval from Defence SA. Adherence to this procedure will ensure an efficient approval process.
Once planning approval is granted the applicant may seek building approval from the Port Adelaide Enfield Council or obtain private building certification before the commencement of construction.

Full development approval (planning and building) must be obtained before the commencement of site works.

A copy of the development approval must be forwarded to Defence SA upon receipt for its records.

The following diagram illustrates the approval process and requirements.
2.1 PLANNING AND DESIGN PRINCIPLES

2.1.1 LAND USE

Purpose
To ensure that development and land use is consistent with Defence SA's vision and objectives for the development of Techport Australia and that land uses comply with the Port Adelaide Enfield City Development Plan.

Criteria
Demonstrate that the proposed land use involves the supply of goods and/or services to the naval and defence sectors.

At least one of the following must form a substantial part of activities

- Research and development
- Product development or improvement
- Supply of technology-based products
- Provision of specialist services to increase the capability of companies in the naval and defence related industries

Guidance:
Policy Area 49 - Development (Osborne Maritime Policy Area) Variation Regulations 2005

2.1.2 SITE COVERAGE, BUILDING ENVELOPE AND SETBACKS

Techport Australia has been masterplanned and designed in a way to secure future benefits and generate investment appeal. The Supplier Precinct has been designed for the future, the precinct incorporates best practice planning and sustainability principles. The setbacks listed below are illustrative of best practice planning and assist in the attainment of sustainability principles.

Defence SA encourages applicants to adhere to the setbacks illustrated below in support of these practices and principles but will consider alternate setback arrangements on a case-by-case basis.

2.1.2.1 STREET FRONT SETBACKS

Purpose
To:
- satisfy Port Adelaide Enfield City Development Plan requirements
- achieve an attractive streetscape appearance compatible with the desired character of the locality
- enable screening and boundary treatments, and
- enable the employment of Ecologically Sustainable Development principles.
Criteria

1. For a factory / warehouse that incorporates an office component, the main building line of the office component must be a minimum of:
   a) 15 metres from the street frontage when on site car parking is located between the street alignment and the building, and a three (3) metre wide landscaped area is provided adjacent to the street alignment, and
   b) six (6) metres from the street frontage when the space in between the building and the front street alignment is landscaped and on site car parking is located elsewhere on the site.

   Note: Porticos and verandahs may be forward of this minimum requirement.

2. The factory or warehouse component, that does not incorporate an office component, must be:
   a) a minimum of eight (8) metres from the street frontage when the space between the building and the street alignment is landscaped and on site car parking is located elsewhere on the site, and
   b) a maximum of 40 metres from the street frontage when on site car parking is located adjacent to the street alignment.

Guidance:
Techport Australia Urban Design Guidelines
- 2.3.1 Fencing Principles (front)
- 2.4.1 Landscaping Design Principles (street frontages)

Techport Australia Ecologically Sustainable Development Guidelines
- 4.3.1.2.1 Land Use and Ecology (Landscaping)
2.1.2.2 Side Setbacks

**Purpose**

To enable adequate screening, boundary treatments and the employment of ESD principles.

**Criteria**

North / south orientated allotments

1. the building must have a minimum side setback of 10 metres to the western boundary, and
2. the building must have a minimum side setback of six (6) metres to the eastern boundary.

East / west orientated allotments

3. the building must have a minimum side setback of 10 metres to the northern boundary, and
4. the building must have a minimum side setback of six (6) metres to the southern boundary.

Secondary street alignment

5. the building must have a minimum setback of three (3) metres from a side or secondary street alignment.

**Guidance:**

Techport Australia Urban Design Guidelines

- Section 2.3.2 Fencing Principles (side and rear fencing)
- Section 2.4.2 Landscaping Design Principles (side and rear boundaries)

2.1.2.3 Rear Setbacks

**Purpose**

To enable adequate screening, boundary treatments and the employment of ESD principles.

**Criterion**

1. There must be a minimum of a six (6) metre setback to the rear of the building.

**Guidance:**

Techport Australia Urban Design Guidelines

- 2.3.2 Fencing Principles (side and rear fencing)
- 2.4.2 Landscaping Design Principles (side and rear boundaries)

2.1.2.4 Site coverage

There are no numerical standards in relation to site coverage for industrial development within Techport Australia. Site coverage shall be determined, having regard to compliance, with particular emphasis on building setbacks, the provision of adequate on site car parking and manoeuvring areas and the provision of adequate landscaped open space.
2.1.3 VEHICLE PARKING

2.1.3.1 Parking Amenities

Purpose

To ensure the identification and provision of sufficient, safe and secure off-street car parking relevant to the size of the development together with adherence to 'Crime Prevention through Environmental Design' (CPTED) principles.

Criteria

1. For labour intensive industries:
   a. 0.75 car spaces per employee (inclusive of office floor area)

2. For non-labour intensive industries:
   a. Up to 200m² of factory / warehouse space:
      • 3.3 spaces per 100m² office floor area plus, and
      • two spaces per 100m² of factory / warehouse area up to 200m²
   b. Between 200-2000 m² of factory / warehouse space:
      • 3.3 spaces per 100m² office floor area plus
      • two spaces per 100m² of factory / warehouse area up to 200m², plus
      • 1.33 spaces per 100m² of factory / warehouse area between 200m² and 2000m²
   c. Greater than 2000m² of factory / warehouse space:
      • 3.3 spaces per 100m² office floor area plus
      • two spaces per 100m² of factory / warehouse area up to 200m² plus
      • 1.33 spaces per 100m² of factory / warehouse area between 200m² and 2000m²
      • 0.67 spaces per 100m² factory / warehouse area over 2000m²

3. One out of every 25 parking spaces should be designated as a disabled parking space with a maximum of five disabled parking spaces in total.

4. All disabled parking must meet the Disability Discrimination Act and relevant Australian Standards requirements;

5. Visitor parking to be located at the front of the building and avoid conflict with heavy vehicle movement (exceptions may be made for corner allotments).

6. Parking areas shall be designed in accordance with CPTED principles such as:
   a. adequate illumination of the space
   b. enable people to see and be seen
   c. use signage to enable users to move safely through the space, indicate safe routes and provide directions
   d. use landscaping to assist in the defining of space, and
   e. clear boundary definitions that define ownership and usage of the space.

7. Undercroft parking is not desirable.

2.2 BUILDING DESIGN PRINCIPLES

2.2.1 BUILDING DESIGN, APPEARANCE, HEIGHT AND SCALE

The building design principles should be read in conjunction with Section 3: Ecologically Sustainable Development Introduction and Section 4: ESD Guidelines.

2.2.1.1 Building Design and Appearance

Purpose

To ensure each building is designed to reflect the desired industrial characteristics of Techport Australia, is of a consistent high quality appearance and adheres to CPTED principles.

Criteria

Office / Administration Component shall:
1. be located on the main frontage of the building
2. have a designated, highly visible and directly accessible entry point
3. include a canopy or verandah over the designated entry point
4. be designed as a contemporary office / industrial building
5. be designed as an integral part of the overall building
6. incorporate a higher level of detailing than that required for the main factory component
7. utilise industrial materials and design elements, and
8. include parapet detailing and substantial relief design to large expanses of wall.

Factory / Warehouse Component shall:
1. step the facade or building line to create a minimum 300mm shadow line
2. provide for façade articulation or relief elements through varying material texture, colour or panelling above doors and windows, and
3. include external elements such as feature downpipes and rainwater heads.

Security Points or Guard Houses shall:
1. be constructed to reflect the main building and include architectural detailing listed above.

CPTED principles shall be included into the design of the building.

Examples include:
1. walls at ground level adjacent to street boundaries should be broken up with articulation
2. maximisation of the number of entries to a building from the street, and
3. enabling of passive surveillance of streets and car parks by providing windows in buildings.

Guidance:
Techport Australia Urban Design Guidelines
• Section 2.2.2 Materials and Finishes
Techport Australia Ecologically Sustainable Development Guidelines
• All Sections
Crime Prevention through Environmental Design Manual 2001 - Department of Justice - Crime Prevention

2.2.1.2 Building Height and Scale

Purpose
To ensure building heights are in proportion to adjacent buildings within the precinct and scaled appropriately.

Criteria
1. Total height of factory / warehouse component shall be no more than double the height of the office / administration component unless suitable architectural elements are included in the factory component.
2. Buildings shall minimise overshadowing onto the useable outdoor space of the subject and adjacent sites.

Demonstrates acceptable building design and appearance

Demonstrates acceptable building height and scale (2.1.0.1)

Office component should be a minimum 50% height of warehouse component.

Warehouse should not dominate the street frontage.
2.2.2 MATERIALS AND FINISHES

Purpose

To ensure the use of building materials, including finishes and colour that:

- are compatible with the industrial character of the location
- will enhance the character of the built form
- are suitable to the environmental conditions associated with a marine locality, and
- are compliant with all Council Development requirements.

Criteria

1. Building design shall provide a variety of building finishes and colours to highlight feature areas or unique design components such as roof lines, windows, porticos, building and façade articulation, vents and downpipes.

2. Materials shall be of low reflectivity to minimise glare to adjacent sites.

Guidance:
Port Adelaide Enfield Council Development Guide Index
Techport Australia Urban Design Guidelines
- Section 2.2.1.1 Building Appearance

2.2.3 ROOF LINES

Purpose

To ensure that the appearance of building, particularly from public areas, is of a consistently high quality.

Criteria

1. Roof lines must screen roof mounted plant and equipment from public view.
2.2.4 ACCESS AND LOADING AREAS

2.2.4.1 Access

**Purpose**
To ensure safe and efficient vehicle and pedestrian access to and egress from individual sites.

**Criteria**
1. Site to be designed to allow vehicles to exit the site in a forward direction.
2. Access for B-double trucks - a traffic engineer’s report demonstrating safe site access, no undue disruption to road users and no damage to landscape or infrastructure is required.
4. Access and loading areas to be separated from pedestrian paths.

**Guidance:**
Port Adelaide Enfield Council - Technical Services Department - “Standard Civil Engineering Construction Details SK1071” (Telephone: 08 8405 6600)
Australian Standards - AS 2890.2:2004 - Parking facilities - Off street commercial vehicle facilities

2.2.4.2 Loading Areas

**Purpose**
To ensure the layout of loading bays is safe, convenient and visually attractive.

**Criteria**
1. Where possible, loading areas shall be located to the rear of allotments.
2. Loading areas shall be located as far from main road frontage as possible.

**Guidance:**
Australian Standards - AS 2890.2:2004 - Parking facilities - Off street commercial vehicle facilities

2.2.5 STORAGE, WASTE MANAGEMENT AND SERVICE AREAS

2.2.5.1 Storage and Service Areas

**Purpose**
To ensure the storage of goods and large objects is safe and does not affect the visual amenity of Techport Australia.

**Criteria**

General Storage and Service Areas shall be:
1. Located away from the main road setback.
2. Suitably screened through both physical built form and landscaping.
3. Screened from neighbouring allotments.
Plant and Equipment Areas shall:
1. not be located adjacent to the front entrance area.
2. be set back to minimise visual conflict with the streetscape.

Note: Plant and equipment includes such items as fire extinguishers, transformers, generators and related items.

Storage of chemicals and materials (including loading areas):
1. provision of containment facilities shall be made to prevent entry of liquids or solids to external stormwater drainage systems.
2. containment facilities shall:
   • have adequate capacity to contain spills of stored materials
   • have walls and floors of impervious construction to retain the stored materials
   • include a waste retaining sump, holding tank or pumping sump that is capable of containing spills
   • provide adequate access for the removal of water or spilt materials, and
   • be protected and secured from public access and identified with appropriate signage.

Shipping Container Storage:
1. Stored shipping containers shall:
   a. be set back at least 3 metres from boundaries, and
   b. not be sited on or visible from the street frontage(s).
2. Stored shipping container stacks shall:
   a. not exceed the height of six containers
   b. be appropriately secured, and
   c. be stacked in a pyramid formation from the boundaries with the closest tier to the boundary not exceeding the height of one container.

Guidance
Techport Australia Urban Design Guidelines
   • Section 2.4.5 Landscaping Design Principles (Landscaping of Service and Storage Areas)

Note: compliance with these requirements does not obviate the need of the applicant to meet all other relevant statutory requirements and licences and to seek all necessary statutory approvals.

---

2.2.5.2 Waste Management

Purpose
To ensure a waste management system is in place and designated areas for waste recycling have been provided in order to protect the visual appearance and amenity of Techport Australia.

Criteria
1. Designated and appropriately screened areas for waste recycling shall be provided.
2. Waste management areas shall be:
2.2.6 LIGHTING

Purpose

To ensure sites are appropriately illuminated to provide an attractive environment at night and adherence to CPTED principles without creating undue light spill or glare to adjacent properties and residential areas.

Criteria

1. External lighting shall be provided to avoid dark spots:
   • around doorways, windows and pedestrian pathways
   • in areas where goods and equipment are stored, and
   • in all car parking areas.
2. Lighting must be appropriately directed or baffles installed to prevent illumination of adjacent properties and residential areas.
3. All lighting shall adhere to relevant Australian Standards.
4. Car parks and entrances shall be adequately illuminated for safe after-hours access and egress.
5. Lighting should adequately address security requirements without excessive energy consumption.

Guidance:

Techport Australia Ecologically Sustainable Development Guidelines
- Factory / Warehouse Component
  - Section 4.3.1.2 Land Use and Ecology (Light Spill)
  - Section 4.3.1.3.2 Indoor Environmental Quality (Natural Lighting)
- Crime Prevention through Environmental Design Manual 2001 - Department of Justice – Crime Prevention Unit

Australian Standards

AS 4282-1997 Control of the obtrusive effects of outdoor lighting
2.3 FENCING PRINCIPLES

Purpose
To ensure fencing is consistent with and complements the visual amenity of Techport Australia.

Criteria
1. All fencing shall be visually unobtrusive and complementary to the streetscape.
2. Fencing shall be integrated into the overall design of the development and associated security structures.
3. Gates, security structures and letterboxes should be designed to complement fencing and be considered as components of the overall design for all development.
4. All tubular fencing shall require concrete plinthing between 150-300mm high.
5. All tubular fencing shall be Colorbond® ‘grey ridge’.

2.3.1 FRONT FENCING

Criteria
1. Front fencing shall provide visual permeability to the street to provide a sense of address and to contribute to the streetscape and shall be:
   • powder coated black, steel post and rail type fencing or an approved alternative
   • visually transparent,
   • no more than 2.4 metres in height.

2.3.2 SIDE AND REAR FENCING

Criteria
1. Side and rear security fencing shall be constructed of black plastic coated ‘chain link’ fence or an approved alternative.
2. Side and rear fencing (non-security related) shall be constructed from Colorbond® sheet fencing and be Colorbond® ‘grey ridge’ in colour.
3. Side and rear fencing shall be no more than 2.4 metres in height.
2.4 LANDSCAPING DESIGN PRINCIPLES

Purpose

To create external open spaces that enhance the site amenity and public areas, provide environmental opportunities and minimise environmental impacts through appropriate design.

Criteria

1. All planting shall be reflective of the species listed in Appendix A.
2. At least 10% of total site area must be landscaped.
3. Lawns or turfed areas are not encouraged and should be kept to a minimum unless irrigated from water captured and stored on site.
4. The selection and positioning of tree species shall take into account the height and scale of the building.

Guidance:

Techport Australia Development Guidelines - Appendix A: Plant list for Techport Australia
Techport Australia Ecologically Sustainable Development Guidelines
- Industrial Development
  - Section 4.3.2.3.1 Land Use and Ecology (Indigenous Planting)
  - Section 4.3.2.3.2 Land Use and Ecology (Soil Amelioration)
  - Section 4.3.2.1 Water

Local indigenous plant lists for your area - [www.urbanforest.on.net](http://www.urbanforest.on.net)  
(Northern - map N18)

2.4.1 LANDSCAPING OF STREET FRONTAGES

Criteria

1. Planting shall allow views through to buildings from the street.
2. Landscaping adjacent to front fencing shall not form a dense screen, except where required to screen outdoor storage areas or plant and equipment.

Guidance:

Techport Australia Urban Design Guidelines
- Section 2.1.2.1 Building Envelope and Setbacks (street frontage)

Techport Australia Ecologically Sustainable Development Guidelines

- Factory / Warehouse
  - Section 4.3.2.3.1 Land Use and Ecology (Landscaping)
  - Section 4.3.2.3.2 Land Use and Ecology (Soil Amelioration)
- Industrial Site Development
  - Section 4.3.2.1 Water (Water-wise Landscaping)
2.4.2 LANDSCAPING OF SIDE AND REAR BOUNDARIES

Criteria

1. A minimum of 50% of the landscaping requirement to be provided adjacent to side and rear allotment boundaries.
2. Side and rear boundaries (facing public spaces) shall be landscaped with species suitable for screening purposes.
3. Landscaping to the northern and western allotment boundaries shall be planted with vegetation to mitigate against the northerly winds and afternoon sun during summer periods.
4. Consideration shall be given to evergreen species on northern and western boundaries.
5. To the southern and eastern boundaries, landscaping shall permit filtration to allow penetration of cooling prevailing winds and morning sun through to buildings.
6. Deciduous vegetation is encouraged on southern and eastern boundaries.

Guidance:
Techport Australia Urban Design Guidelines
- Section 2.1.2.3 Building Envelope and Setbacks (rear)
- Section 2.1.2.2 Building Envelope and Setbacks (side)

Techport Australia Ecologically Sustainable Development Guidelines
- Industrial Development
  - Section 4.3.2.3.1 Land Use and Ecology (Landscaping)
  - Section 4.3.2.3.2 Land Use and Ecology (Soil Amelioration)
  - Section 4.3.2.1 Water (Water-wise Landscaping)

2.4.3 LANDSCAPING OF CAR PARKS

Criteria

1. Landscape beds adjacent to car parks must be at least 1.8 m wide (excluding kerbs and other barriers).
2. High canopy trees shall be used for shade within the car parking areas with low/groundcover varieties to a maximum height of 700mm to allow clear lines of sight within car parking areas and to internal site access pathways.
3. Minimum of one shade tree to be provided per eight bays within the car park.
4. Suitable landscaping, including tree cover to be provided adjacent to car parking areas to shade and soften expansive hard areas.
5. Landscaped medians and traffic islands shall be incorporated within the car park where possible.

Guidance:
Techport Australia Urban Design Guidelines
- Section 2.1.3 Vehicle Parking

Techport Australia Ecologically Sustainable Development Guidelines
- Industrial Development
  - Section 4.3.2.3.1 Land Use and Ecology (Landscaping)
  - Section 4.3.2.3.2 Land Use and Ecology (Soil Amelioration)
  - Section 4.3.2.1 Water (Water-wise Landscaping)
  - Section 4.3.2.1.3 Water (Reduced Paving and Impervious Surfaces)
2.4.4 LANDSCAPING FOR SECURITY

Criteria

1. Landscaping must adhere to CPTED principles by providing for an effective and maintained landscape that:
   a. creates clear sight lines
   b. creates clear and safe routes for access and egress
   c. conveys order and maintenance
   d. assists in defining space, and
   e. decreases the opportunities for particular types of crimes.

Guidance:

Techport Australia Ecologically Sustainable Development Guidelines
- Industrial Development
  - Section 3.3.1 Land Use and Ecology (Landscaping)
  - Section 4.3.3 Land Use and Ecology (Soil Amelioration)
- Water (Water-wise Landscaping)

Crime Prevention through Environmental Design Manual 2001 - Department of Justice - Crime Prevention Unit

Demonstration of requirement. (2.4.4)

Enable passive surveillance through appropriate landscaping.

2.4.5 Landscaping of Service and Storage Areas

Criteria

1. Service and storage areas shall be suitably landscaped with screening plants to complement well designed physical measures such as timber screening etc.

Guidance:

Techport Australia Ecologically Sustainable Development Guidelines
- 4.3.2 Industrial Site Development
  - Land Use and Ecology (Landscaping)
  - Land Use and Ecology (Soil Amelioration)
  - Water (Water-wise Landscaping)
2.5 SIGNAGE PRINCIPLES

Purpose
To ensure high quality signage that contributes positively to the visual amenity of Techport Australia, and that enables effective identification of individual business.

Criteria
1. Sites are allowed to have two types of signage:
   a. building façade sign - affixed or painted directly to the building façade, and
   b. tenant entry point sign - located within the site boundaries, adjacent to the entry.

2. Tenant signage shall identify each particular site and/or building so that it can be read from the street and footpath during day and night.

3. Tenant signage shall be constructed of durable materials, such as diabond, with approved UV stabilised colours and, if illuminated, shall be internally lit, or directionally lit in accordance with criteria 17 Light Spill in Section 4.3.1.2.2.

4. Tenant entry point signage shall comprise a single free standing sign when
   a. land with frontage of less than 50 metres:
      • total height does not exceed a maximum of six metres, and
      • total area of the sign face does not exceed a maximum of six square metres
   b. land with a frontage exceeding 50 metres:
      • maximum height may increase by one metre for every additional 10 metres of frontage or part thereof to a maximum height of 10 metres
      • total area of the sign face may increase one square metre for every 10 metres of frontage or part thereof, to a maximum of 10 square metres, and
      • An additional free standing sign of not more than six metres in height and six square metres in area may be erected on the land.

5. Building façade signage shall:
   a. be located on the front facia side of the building only (Note: signage allowed on all sides of the building fronting the street on corner allotments)
   b. be integrated with the overall architectural design of the building
   c. be simple in form, colour and structure
   d. not be located above the parapet level, and
   e. not exceed 5% of any one frontage in area.
6. Signs should be limited to the name and insignia of the firm occupying the site.

7. Signage shall not include:
   - third party signage
   - flashing or animated signs
   - bunting, streamers, flags or wind vanes
   - sandwich boards or other mobile signs
   - A-frame signage; and
   - post mounted signs.

8. All signage must meet the requirements as outlined by the *Port Adelaide Enfield City Development Plan and Guidelines*.

Guidance:
Port Adelaide Enfield (City) Development Plan
SECTION 3
INTRODUCTION TO
ECOLOGICALLY SUSTAINABLE DEVELOPMENT
3.1 ECOLOGICALLY SUSTAINABLE DEVELOPMENT FRAMEWORK

3.1.1 INTRODUCTION
The transformation of cities and countries to environmental sustainability requires the co-operation of governments (at all levels), resource managers, the business community, community groups and private citizens. Their collective and individual contributions are essential in achieving the common goal.

Defence SA is committed to the South Australian Government’s vision of being “clean, green and sustainable”. In recognising this commitment, Defence SA has developed Ecologically Sustainable Development Guidelines to clearly articulate its expectations in the development and use of Defence SA land.

The framework includes an ESD vision, mission, goals and 10 sustainability principles to guide development.

3.1.2 ESD VISION
To demonstrate leadership in environmental sustainability in development and construction activities undertaken or overseen by Defence SA and to contribute towards the achievement of South Australia’s sustainability targets as detailed in South Australia’s Strategic Plan.*

* Refer “South Australia’s Strategic Plan” website for details of the sustainability topics and targets.


3.1.3 ESD MISSION
For development and construction undertaken or overseen by Defence SA and related parties to result in:

- the sensible use, re-use, and where possible, regeneration of natural resources and assist in:
  - maximising our future economic sustainability and growth
  - maintaining our quality of life, and
  - protecting and respecting our local environment.

3.1.4 ESD GOALS
To establish realistic and deliverable guidelines, with a preventative focus, in order to guide development and construction in the minimisation of pollution, conservation of species and natural resources, and to ensure the continued protection and promotion of existing and future environmental sustainability. Specifically:

- provide direction to our consultants, contractors and development partners about the:
principles and practices that guide the development of Defence SA
land holdings
fundamental design elements for ecological sustainable development
• tangibly contribute towards the achievement of the South Australian
Government's sustainability objectives as detailed in South Australia's
Strategic Plan
• foster a genuine commitment to the adoption of sustainable practices, and
• minimise, and where possible mitigate, environmental damage that occurs as
a result of the actions of businesses on the land Defence SA is responsible for
developing or managing.

3.1.5 SUSTAINABILITY PRINCIPLES

Ten sustainability principles have been established to guide the development
activities overseen by Defence SA. A summary of the principles and the actions to be
implemented to achieve them is provided below.

3.1.5.1 ENVIRONMENTAL

1. Plan, design and construct for sustainability
   • adopt ecologically sustainable development (ESD) principles
   • adopt water sensitive urban design (WSUD) principles, and
   • promote innovation and best practice sustainable design.

2. Conserve and protect natural resources:
   • protect non-renewable resources
   • provide for water efficiency, and, where possible, waste water re-use and
     rainwater collection
   • encourage the development of energy efficient buildings
   • reduce greenhouse gas emissions
   • explore and encourage the use of alternative energy systems, and
   • promote the use of renewable energy sources.

3. Foster air and water quality:
   • minimise and, where possible, prevent pollutants entering our air, land or
     waterways, and
   • promote and make provision for alternative ‘green’ transport opportunities.

4. Minimise waste:
   • promote sustainable waste management practices, and
   • maximise the reuse of resources.

5. Create a healthy urban environment:
   • develop healthy buildings and urban spaces for workers and visitors and local
     residents, and
   • recognise, conserve and protect the intrinsic value of natural eco systems.
3.1.5.2 ECONOMIC

6. Maximise the value of built form assets and ESD marketing opportunities for each precinct.

7. Create long-term value
   - maximise the long term value of the development
   - ensure the development caters for future generations
   - set and review development benchmarks
   - set minimum standards for assessment, and
   - assess and monitor all relevant initiatives.

3.1.5.3 SOCIAL

8. Recognise and respect distinctive regional characteristics and culture:
   - plan for and encourage a community that practices sustainability, and
   - plan and encourage complementary resource uses within and across precincts.

9. Balance economic, social and environmental outcomes:
   - set performance indicators
   - balance short term gains against long term savings, and
   - encourage applications that maximise return on effort.

10. Develop a collaborative approach with the community.

3.2 ECOLOGICALLY SUSTAINABLE DEVELOPMENT - CONTEXT

In aiming to achieve ESD principles it is important to understand why ESD initiatives have been included as part of the development guidelines. These broad categories help to describe why planning and designing for sustainability is essential to our future.

3.2.1 ENERGY

Energy is essential to the operation of modern built environments. It ultimately contributes to the provision or creation of goods, services, transport and comfort. Services that depend on reliable energy sources include domestic, commercial and industrial air conditioning, heating, hot water, lighting, appliances, transport and industrial equipment.

Defence SA is adopting a practical and responsible approach to ESD to ensure high standards of urban design and overall design excellence. The ultimate aim is to reduce the reliance on energy from non-renewable sources, reducing greenhouse gas emissions and to promote the onsite generation of electricity from renewable sources such as the sun or wind.
3.2.2 WATER

“Australia is the driest inhabited continent on earth - per capita we are one of the world’s largest consumers of water. Taking into account all uses of fresh water, the average Australian uses more than 1 million litres of water per year. The water is mainly used for irrigation (about 75%), with urban and industrial use accounting for about 20%.”

The Adelaide metropolitan area depends upon the Mount Lofty Ranges and the River Murray for the provision of water. As drought is now an increasingly regular occurrence in the Australian environment, water management practices are becoming increasingly more important.

The use of water-efficient fittings and appliances, and the collection and re-use of stormwater will achieve significant reductions in the demand for potable water.

Consumers will benefit from access to water sources that are unaffected by:

• restrictions
• cost-savings from reduced consumption
• reduced infrastructure costs for stormwater treatment, and
• cleaner water bodies adjacent to where we live, work and play.

1. SA Water website “Slow the Flow”
   [website link]

3.2.3 ATMOSPHERE / EMISSIONS

Pollution of the atmosphere during construction and operation of buildings can have both local and global environmental impacts. ESD policies seek to reduce emissions or influence the reduction of emissions to the environment.

3.2.4 TRANSPORT

Transport is an essential component of human settlements. It influences settlement patterns and liveability, is essential for economic performance and provides opportunities for people to participate in social, economic and recreational activities.

Transport can be broadly divided into two categories – passenger transport and freight transport. South Australia’s high dependency on private vehicles and our relatively low use of public transport are a major environmental concern.

A key issue in minimising the environmental impact of transport is to reduce the need to travel and, where travel is necessary, to encourage more sustainable forms of transport. Personal mobility is important for all South Australians, therefore decreasing the use of the private car while maintaining personal mobility is a significant challenge.

ESD policies seek to encourage the use of more sustainable forms of transport.
3.2.5 LAND USE AND ECOLOGY

Sustainable land management means managing land without damaging ecological processes or reducing biological diversity. It requires the maintenance of biodiversity, ecological integrity and natural capital.

Land is often managed for multiple benefits. To ensure long-term sustainability Defence SA will consider and balance economic, social and environmental factors in the management and development of land areas for which it is responsible.

3.2.5.1 BIODIVERSITY

Biodiversity is the variety of life - the different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part.

The enhancement of biodiversity is inherently local in nature, focusing on the protection and/or restoration of indigenous flora and fauna.

Defence SA has mandated a number of landscaping guidelines within developments in order to support the restoration and protection and to link with regional open space areas.

3.2.5.2 SOIL AND GROUNDWATER

The identification and remediation of contaminated soil and groundwater and the prevention of soil and groundwater degeneration both during and following construction are areas of focus for Defence SA.

3.2.5.3 OPEN SPACES

Parks, trails, and open spaces can improve the environmental health of the community and substantially increase the quality of life for residents.

Open space areas and linkage corridors can:

- provide for water management
- provide for incorporating a logical pedestrian and cycle system, and
- contribute to the creation of connected, well located and designed places for active and passive recreation for residents, workers and visitors.

3.2.5.4 CULTURE AND HERITAGE

Australia is a complex and diverse nation composed of both Indigenous and immigrant people from nearly 200 countries however, we all have a common heritage that makes us distinctively Australian. By knowing our heritage - our past, our places and the source of our values - we can better understand our special place in the world.

Aboriginal and Torres Strait Islander people’s heritage is an important part of Australia’s heritage. Indigenous heritage sites hold great meaning and create continuous links between the people and the land.
3.2.6 INDOOR ENVIRONMENTAL QUALITY

It is generally recognised that Australians spend 90% or more of their time indoors. Poor indoor air quality can result in significant adverse impacts on our health. ESD policies will seek to improve indoor air quality for workers in the Techport Australia precinct.

3.2.7 WASTE

Despite an increase in the number of people participating in recycling initiatives, the amount of waste going to landfill is increasing. Each year approximately one tonne of solid waste is generated per person. This is despite the fact that a large proportion of total waste discarded to landfill could be recycled and converted into valuable products, re-used or composted. Information on treatment and re-use of liquid wastes is scant, although some recycling is undertaken.

Waste minimisation strategies are necessary to reduce the amount of waste going to landfill as a result of urban regeneration. Defence SA strongly encourages developers to adopt KESAB ‘clean site’ initiatives in order to prevent pollution from building and construction sites entering our waterways and polluting our environment.

2 Zero Waste fact sheet ‘construction and demolition materials’

3.2.8 BUILDING MATERIALS

Buildings are large entities and, as such, they impact upon the environment in various ways. Present-day designs clearly consume large quantities of physical resources such as materials, energy and money in their construction, maintenance and use but they also can result in effects such as loss of amenity and biodiversity that are much more difficult to assess.

If we are going to develop and build in an ecologically-sustainable manner, or even substantially reduce the environmental impacts of current building approaches and practices, it will be necessary to consider the impact of a building over its full life-cycle (harvesting and manufacture of building projects, construction, use, versatility of use and eventual demolition of a building).

Defence SA encourages developers to show care in selecting low-impact materials or products and promote the sensible recycling and re-use of building materials.

3.2.9 INNOVATION

The development and construction industry will be increasingly challenged as sustainable development becomes a standard for forward thinking companies. Economic benefits and marketing advantages can also be increased through heightened ESD awareness, adoption and increased consumer demand.

Defence SA welcomes innovation. Developers are encouraged to demonstrate new technologies and best practice environmental design. Innovation can also allow developers more freedom to achieve desired ESD outcomes without compromising on building design and functionality.
SECTION 4
ECOLOGICALLY SUSTAINABLE DEVELOPMENT GUIDELINES
4.1 ECOLOGICALLY SUSTAINABLE DEVELOPMENT GUIDELINES INTRODUCTION

4.1.1 INTRODUCTION

ESD Initiatives have been grouped into three categories:

1. Commercial Development.
2. Industrial Development:
   a. Industrial Building (Office and Factory/Warehouse)
   b. Industrial Site Development
   c. Office Component, and
   d. Factory/Warehouse Component.
3. Opportunities for Innovation.

4.1.2 COMMERCIAL OFFICE DEVELOPMENT

The Green Star Office Design V2 Rating Tool will be utilised to assess Commercial Development. This tool evaluates the environmental potential of the design of commercial offices (base buildings).

The Green Star environmental rating system for buildings was created to:

- establish a common language
- set a standard of measurement for green buildings
- promote integrated, whole-building design
- recognise environmental leadership
- identify building life-cycle impacts, and
- raise awareness of green building benefits.

Although Green Star certification requires a formal process, anyone can freely download and use the Green Star tools as a guide to track and improve their environmental performance.

Some additional requirements in relation to reduced energy consumption are included in this section.

4.1.3 INDUSTRIAL DEVELOPMENT

Industrial Development will be assessed against criteria in the following categories:

- energy
- emissions
- land use and ecology
- indoor environmental quality
- waste
- building materials, and
- transport.
A green star rating tool for industrial facilities is currently under development by the Green Building Council of Australia. This section may be superseded by the industrial rating tool once it has been finalised.

4.1.4 OPPORTUNITIES FOR INNOVATION

ESD innovation is highly encouraged by Defence SA.

4.1.5 INITIATIVE CLASSIFICATION

Initiatives have been developed to support the achievement of South Australia’s Strategic Plan: Objective 3 – Attaining Sustainability. These initiatives have been classified as:

**Mandatory**
The mandatory initiatives are minimum requirements for all new development.

**Optional**
A specified number of optional principles must be adopted by all new developments. The developer may choose the most suitable principles to incorporate into the project. Refer to table below for the number of optional principles to be incorporated.

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**Best Practice**
Defence SA strongly encourages the integration of best practice ESD initiatives listed throughout the Development Guidelines into the design, construction and operation of a building. The adoption of best practice ESD initiatives, as stated by the Green Building Market Report 2006 is likely to lead to “lower operating costs, lower lifetime costs, higher building value, enhanced marketability, increased staff productivity and retention, higher ROI and reduced liability and risk.”

4.2 COMMERCIAL DEVELOPMENT

Note: At least one optional item to be incorporated from the commercial development area.

4.2.1 GREEN STAR RATING

Purpose
To encourage developments to achieve best practice energy efficiency and reduce greenhouse gas emissions.

Criteria
1. The achievement, through a desktop audit by an accredited Green Star Professional, of a minimum of a 5-star Green Star rating, or
2. The achievement of a minimum of 6-star Green Star rating certification

Benefits
The benefits to achieving a 5 star (or more) Green Building Council of Australia Green Star rating include:

• reduction in energy costs and greenhouse gas emissions through the design of an energy efficient building
• marketing opportunities available as a result of obtaining a Green Building Council of Australia Green Star Rating (Note: You must have a Green Star Certification in order to market the benefits. The benefit is therefore only available if the ‘Best Practice’ option is selected and achieved), and
• reduction in greenhouse emissions.

Acknowledgement
Defence SA acknowledges the conflict between the Green Star Office Design V2 rating tool and the Port Adelaide Enfield City Development Plan with respect to car parking requirements.

Given the location of Techport Australia and the proximity of alternative transportation opportunities, guidance for car parking allowances aligns with the Port Adelaide Enfield City Development Plan.

Guidance:
Green Building Council of Australia (GBCA)
Green Star Rating Tool – Office Design V2
www.gbcaus.org/docs/greenstar/tools/GreenStar_OfficeDesign.xlsDemonstrate
Green Star - Office Design V2 Technical Manual
www.gbcaus.org/gbc.asp?sectionid=107&docid=968
Accredited Professional Directory
www.gbcaus.org/gbc.asp?sectionid=74&docid=941
4.2.2 ENERGY

4.2.1.1 PASSIVE SOLAR DESIGN

Purpose
To encourage developments to achieve best practice energy efficiency in order to reduce reliance on non-renewable energy sources.

Criteria
3. The building orientation takes account of summer and winter solar patterns. Mandatory

Guidance:
Australian Government Greenhouse Website
Technical Manual Design for Lifestyle and the Future - Passive Design

4.2.1.2 LIGHTING

Purpose
To encourage and recognise the use of natural light and other lighting design practices which lessen lighting energy consumption while maintaining appropriate lighting levels and minimising heat loads.

Criteria
4. Use of high efficiency light fittings (featuring electronic ballasts, silver lux reflectors and TS luminaires) with smart lighting control systems that utilise:
   • motion detection
   • daylight sensing on/off, and
   • dimmer control. Mandatory

5. Design to maximise daylight penetration in order to reduce dependence on artificial lighting systems. Optional

Guidance:
Australian Government Greenhouse website
Sustainable Energy Development Authority NSW Energy Smart website
www.energysmart.com.au
International Association for Energy Efficient Lighting
www.iaeel.org

4.2.1.3 RENEWABLE ENERGY – HOT WATER

Purpose
To encourage use of solar or waste heat collection to reduce reliance on reticulated energy supply infrastructure in meeting hot water demands.

Criteria
6. The incorporation of solar or gas hot water heating devices. Best Practice

7. The use of co-generation in the generation of hot water. Best Practice
Benefits

- energy cost savings.
- reduction in the use of non-renewable resources.
- reduction in greenhouse gas emissions.

Guidance:
Australian Government Greenhouse website www.renewable.greenhouse.gov.au

4.2.1.4 LOW ENERGY APPLIANCES

Purpose
To encourage the installation of appliances with at least a 4-star energy rating to achieve best practice energy efficiency in the supply of appliances in industrial and commercial development.

Criteria
8. Demonstrate the installation of low energy appliances with MEPS 4 star minimum standard

Benefits

- reduction in the use of non-renewable resources.
- energy cost savings.
- reduction in greenhouse gas emissions.

Guidance:

4.2.1.5 RENEWABLE ENERGY - ELECTRICITY (PHOTOVOLTAIC SOLAR CELLS OR WIND GENERATION EQUIPMENT)

Purpose
To encourage installation of photovoltaic cells or wind generation equipment and their connection to the grid in order to produce electricity on site, reduce energy costs, reduce the reliance on non-renewable energy sources and reduce greenhouse gas emissions.

Criteria
9. Demonstration of the installation of photovoltaic solar panels on the north side of roofs or facade or wind generation equipment

Benefits

- reduced energy costs.
- possible minimisation of construction materials if used on façade.
- reduction in the use of non-renewable resources.
- reduction in greenhouse gas emissions.

Guidance:
4.2.1.6  ‘LOW ENERGY USE’ COOLING SYSTEMS

Purpose
To encourage the installation of new generation cooling systems to reduce energy demands and the use of non-renewable resources.

Criteria
10. Demonstrate the installation of a new generation cooling system, such as chilled ceilings / beams.  

Best Practice

Benefits
• energy cost savings.
• reduction in the use of non-renewable resources.

Guidance:
Minimum Energy Performance Standards (MEPS) Regulations in Australia
4.3 INDUSTRIAL DEVELOPMENT

4.3.1 INDUSTRIAL BUILDING (OFFICE AND FACTORY / WAREHOUSE) DEVELOPMENT

A minimum of three ‘optional’ ESD initiatives must be included in the development from Section 4.3.1 Industrial Buildings (Office and Factory/Warehouse).

4.3.1.1 ENERGY

4.3.1.1.1 PASSIVE DESIGN

Purpose
To encourage developments to achieve best practice energy efficiency in order to reduce reliance on non-renewable energy sources.

Criteria
11. The building orientation designs for prevailing wind and rain patterns
    Mandatory
12. The building orientation takes account of summer and winter solar patterns
    Mandatory

Benefits
• reduced energy costs.
• reduction in greenhouse gas emissions.

Guidance:
Australian Government Greenhouse Website
Technical Manual Design for Lifestyle and the Future - Passive Design

4.3.1.1.2 LIGHTING

Purpose
To encourage and recognise the use of natural light and other lighting design practices which lessen lighting energy consumption while maintaining appropriate lighting levels.

Criteria
13. Use of high efficiency light fittings (featuring electronic ballasts, silver lux reflectors and TS luminaries) with smart lighting control systems which utilise:
    • motion detection
    • daylight sensing on/off, and
    • dimmer control.
    Mandatory
14. Design to maximise daylight penetration in order to reduce dependence on artificial lighting systems.

Guidance:
Sustainable Energy Development Authority NSW Energy Smart website www.energysmart.com.au
International Association for Energy Efficient Lighting www.iaeel.org

4.3.1.1.3 RENEWABLE ENERGY - ELECTRICITY (PHOTOVOLTAIC SOLAR CELLS OR WIND GENERATION EQUIPMENT)

Purpose
To encourage installation of photovoltaic cells or wind generation equipment and their connection to the grid in order to produce electricity on site, reduce energy costs, reduce the reliance on non-renewable energy sources and reduce greenhouse gas emissions.

Criteria
15. Demonstration of the installation of solar panels on the north side of roofs or façade or wind generation equipment.

Benefits
• reduced energy costs.
• reduction in greenhouse gas emissions.
• minimisation of construction materials if used on façade.

Guidance:

4.3.1.2 LAND USE AND ECOLOGY

4.3.1.2.1 LANDSCAPING

Purpose
To assist with the energy efficiency of buildings.

Criteria
16. Vegetation has been strategically placed to minimise direct sunlight on buildings and thermal loading.

Benefits
• energy cost savings.
• improved visual amenity.

Guidance:
4.3.1.2.2 LIGHT SPILL

**Purpose**
To reduce the impact of light pollution from the development site on adjacent sites, the night sky and the migration of birds and the habitats of insect species.

**Criteria**
17. No direct beam light to carry beyond the site boundaries or upwards without falling directly on a surface with the explicit purposes of illuminating the surface.

**Benefits**
- preservation of local ecology.
- reduction of light spill to adjacent residential areas.

**Guidance:**
- Astronomical Society of Victory website (Outdoor Lighting Principles for Australia in the 21st Century)
  www.asv.org.au/lpoll/olp.rtf
- Australian Standards
  AS 4282-1997 Control of the obtrusive effects of outdoor lighting
  www.saiglobal.com/shopiscript/Details.asp?docn=stds000017299

4.3.1.2.3 OUTDOOR BREAKOUT / PASSIVE RECREATION AREAS

**Purpose**
To provide shaded breakout areas to contribute towards the health and wellbeing of employees.

**Criteria**
18. Provision of shaded external meeting and breakout / passive recreation areas for use by employees.

**Benefits**
- improve workplace conditions.
- improved visual amenity.

4.3.1.3 INDOOR ENVIRONMENTAL QUALITY

4.3.1.3.1 NATURAL / CROSS VENTILATION IN BUILDINGS

**Purpose**
To provide for effective natural ventilation in order to reduce reliance on mechanical ventilation and cooling in buildings and to improve amenity for occupants.

**Criteria**
19. Dual aspect building design to promote natural cross ventilation.
20. The provision of operable windows.
21. The use of roof and gable vents.
22. Operable louvres have been included in window design to provide natural ventilation effectiveness.
**Benefits**

- energy cost savings.
- improved air quality.
- improved workplace environment.
- provides for better health and productivity of workers.

Guidance:
Greenhouse Challenge Plus Fact Sheet #11 - Workplace Design and Layout

### 4.3.1.3.2 NATURAL LIGHTING

**Purpose**

To improve the health of the building and comfort of building residents by providing natural light to interiors.

**Criteria**

23. Demonstrate the optimal use of natural daylight to all general working spaces within the building. *Optional*

**Benefits**

- reduction in energy consumption.
- improved health and productivity of workers.

Guidance:
Greenhouse Challenge Plus Fact Sheet #11 - Workplace Design and Layout

### 4.3.1.4 WASTE

#### 4.3.1.4.1 RECYCLING FACILITIES

**Purpose**

The provision of recycling facilities for solid waste will reduce contribution towards a reduction in the level of solid waste entering landfill.

**Criteria**

24. Separated waste facilities for recycling are indicated on all plans. *Mandatory*

25. Facilities are easily accessible by building users and removal vehicles. *Mandatory*

26. Recycling facilities provided have sufficient capacity to service the needs of the building and its intended users. *Mandatory*

**Benefits**

- reduction in waste going to landfill.
- reduction in the depletion of non-renewable resources.

Guidance:
Zero Waste SA website - Recycling Information Directory
4.3.1.4.2 DISPOSAL OF WASTE AND REFUSE

Purpose
To encourage the recycling of products in order to contribute towards a reduction in the depletion of non-renewable resources and the level of solid waste entering landfill.

Criteria
27. Demonstrate that waste and rubbish will be recycled. Mandatory

Benefits
- reduction in waste going to landfill.
- reduction in the depletion of non-renewable resources.

Guidance:
Zero Waste SA website - Recycling Information Directory

4.3.1.5 BUILDING MATERIALS

4.3.1.5.1 RECYCLED MATERIALS

Purpose
To encourage use of recycled building materials in order to contribute towards a reduction in the depletion of non-renewable resources.

Criteria
28. Demonstrate the use of recycled materials in the built-form. Optional
29. Demonstrate use of recycled material in carpark site preparations. Optional

Benefits
- reduction in the depletion of non-renewable resources

4.3.1.5.2 PVC MINIMISATION

Purpose
To encourage the substitution and phasing out of PVC use in building construction.

Criteria
30. Design and specify alternatives to PVC for drainage where there is a practical and sustainable alternative product. Mandatory
31. Design and specify alternatives to PVC for cables and / or finishes where there is a practical and sustainable alternative product. Best Practice

Benefits
- fewer harmful chemicals generated in the fabrication and disposal

Guidance:
Plastics Industry Pipe Association of Australia Ltd
(Polyethylene - The Optimum Gas Pipe Material)
4.3.1.5 PLANTATION TIMBER

Purpose
To encourage the use of sustainable plantation and/or recycled timber.

Criteria
32. That 95% of timber used in construction activities is from sustainable plantations or recycled.  
   Mandatory

Benefits
• to reduce the reliance on rainforest and old growth timbers for building materials.

Guidance:
Australian Grown Plantation Timber Species - Good Wood  
www.rainforestinfo.org.au/good_wood/oz_pln.htm
Australian Grown Plantation Timber Species - Avoid  
www.rainforestinfo.org.au/good_wood/oz_avoid.htm

4.3.1.5.4 LOCAL MATERIALS

Purpose
To encourage the use of materials from the local area in order to reduce transportation costs and lower air pollution.

Criteria
33. Demonstrate a minimum of 10% (based on $ value) of materials to be harvested, manufactured, supplied and are sourced from within 800km of the project.  
   Mandatory

Benefits
• contribution towards a reduction in CO₂ emissions.
• transportation cost savings.

Local materials sourced from 800km radius of Techport Australia.
4.3.1.6  TRANSPORT

4.3.1.6.1  PEDESTRIAN AND CYCLIST ACTIVITIES

Purpose
To encourage clean air alternatives of getting to work for those workers who live in the local area.

Criteria
34. Provision of direct integration with footpaths and walking routes.  Mandatory
35. Provision of bike storage and showering / changing facilities for cyclists.  Mandatory

Benefits
• contribution towards a reduction in CO\textsubscript{2} emissions through the use of non-emitting transportation.
• healthier work population.
• contribution towards a reduction in staff absenteeism through an increase in staff fitness and wellbeing.

Guidance:
Bicycle SA - Bikedirect web based map series

4.3.1.6.2  VEHICLE PARKING

Purpose
To encourage forms of commuting to the workplace that will contribute towards a reduction in greenhouse emissions.

Criteria
36. Provision of priority parking for employees driving ultra low emission vehicles (such as hybrid vehicles or similar).  Optional
37. Provision priority parking for carpool ride sharing.  Optional

Benefits
• contribution towards a reduction in emissions.
• contribution towards and improvement in air quality.
• less congestion on roads.

Guidance:
CSIRO Publishing - ECOS towards a sustainable future (Instant Low Emission Cars)
4.3.1.6.3 ACCESS TO ALTERNATIVE TRANSPORT

Purpose
To encourage the use of alternative transport in order to reduce pollution and land development impacts caused by car use.

Criteria
38. Development is located within 800m of a railway station  
        Optional
39. Development is located within 800m of a bus stop  
        Optional

Benefits
- contribution towards a reduction in greenhouse gas emissions.
- contribution towards improvement in air quality.
- less congestion on roads.

Guidance:
Travel Smart - Implementing a Green Transport Plan

4.3.1.6.4 INNER PRECINCT TRAVEL

Purpose
To encourage forms of commuting within the industrial precinct that will contribute towards a reduction in greenhouse emissions.

Criteria
40. The provision of company bicycles for use by staff members to attend meetings or make deliveries within the precinct.  
        Best Practice

Benefits
- contribution towards a reduction in emissions.
- contribution towards and improvement in air quality.
- healthier and more productive workers.

4.3.1.6.5 ‘GREENER’ TRANSPORT OPERATIONS

Purpose
To encourage forms of commuting within the industrial precinct that will contribute towards a reduction in greenhouse emissions.

Criteria
41. The provision of forklifts for loading and unloading activities that are powered by bio-fuel or battery powered.  
        Mandatory

‘For businesses using forklifts as part of their operations
Benefits

- contribution towards a reduction in emissions.
- contribution towards an improvement in air quality.

Guidance:
Forklift Action.com (Forklifts and Global Warming)

4.3.2 INDUSTRIAL SITE DEVELOPMENT

A Green Star Rating Tool for industrial facilities is currently under development by the Green Building Council of Australia. This section may be superseded by the industrial rating tool once it has been finalised.

Note: A minimum of three optional items to be included from the industrial site development section.

4.3.2.1 WATER

4.3.2.1.1 STORMWATER RETENTION AND REUSE

Purpose

To reduce loadings on stormwater systems by reducing peak stormwater flows and reduce the demands on potable water supply through use of collected stormwater.

Criteria

42. The retention and re-use of stormwater on site through the use of landscaped drainage swales and bio-retention pits to car parks and hard stand areas. \(\text{Mandatory}\)
43. The retention and re-use of rainwater on site. \(\text{Mandatory}\)
44. Stormwater run-off is directed from sealed surfaces to landscaped areas or drainage swales. \(\text{Mandatory}\)
45. The capture and re-use of water for site irrigation. \(\text{Optional}\)
46. Re-use of treated stormwater for connection to sanitary flushing systems and landscaped areas. \(\text{Best Practice}\)

Benefits

- lower water usage.
- cost savings through reduced water rates.

Guidance:
SA Water Website www.sawater.com.au

4.3.2.1.2 WATER-WISE LANDSCAPING

Purpose

To encourage water efficient garden design in order to reduce the demand on potable water supplies.
Criteria

47. Demonstrate a minimisation of irrigated grass / turfed areas, where not supported by waste water collection systems. **Mandatory**
48. Demonstrate the use of sub-soil irrigation and mulch. **Mandatory**
49. Demonstrate the use of rainwater tanks for watering. **Optional**
50. The use of water-wise plant species as detailed in Appendix A of the *Techport Australia Urban Design Guidelines*. **Mandatory**
51. The use of automatic timers with moisture sensor override. **Mandatory**

Benefits

- lower water usage.
- cost savings through reduced water rates.

Guidance:

*Techport Australian Guidelines Appendix A - Plant Species Techport Australia*
Department of Heritage and Environment
Scoping study to improve measures for water efficiency of buildings

### 4.3.2.1.3 REDUCED PAVING AND IMPERVIOUS SURFACES

Purpose

To reduce the demands on potable water supplies and infrastructure by reducing peak demand and annual usage.

Criteria

52. “Overflow” or infrequently used parking areas are constructed with porous pavement (if vehicle load limits permit). **Mandatory**
53. Demonstrate the use of permeable paving materials for car park surfaces to reduce water run-off. **Optional**

Benefits

- minimise stormwater flows.

Guidance:

Department of Environment and Heritage - Introduction to Urban Stormwater Management in Australia

### 4.3.2.1.4 MINIMISE NUISANCE TO ADJACENT DEVELOPMENT

Purpose

To reduce the demands on potable water supplies and infrastructure by reducing peak demand and annual usage.

Criteria

54. Demonstrate that the development is designed so that overflows do not adversely affect neighbouring properties by way of intensification, concentration or inappropriate disposal across property boundaries. **Mandatory**
Benefits

- minimise external impacts of development.

Guidance:
Department of Environment and Heritage - Introduction to Urban Stormwater Management in Australia

4.3.2.1.5 RAINWATER TANKS

Purpose
To reduce the demands on potable water supplies and infrastructure by reducing peak demand and annual usage.

Criteria
55. Installation of rainwater tanks that are connected to all sanitary flushing systems. **Mandatory**
56. Rainwater tanks to be a minimum of 4500L. **Mandatory**

Benefits
- lower water usage.
- cost savings through reduced water rates.

4.3.2.1.6 FIRE SYSTEM WATER CONSUMPTION

Purpose
To encourage building design that reduces the potential demand on potable water supplies and infrastructure due to water-based fire protection systems.

Criteria
Demonstrate the use of water (or ground) source heat rejection for more than 50% of the total peak heat rejection requirements for the development.
57. There is sufficient temporary storage for fire protection system test water and maintenance drain-downs for re-use on site. **Best Practice**

Benefits
- reduction in demand on potable water supplies.

4.3.2.1.7 BUILDING SURFACE LEVELS

Purpose
To ensure that stormwater associated with a major stormwater event (1 in 100 year ARI) can flow around buildings without relying on underground pipes.

Criteria
58. That surface levels are graded such that sites are generally free draining with sufficient overflow capacity to ensure that waters do not enter buildings when underground drainage systems are beyond their capacity. **Mandatory**
59. That drainage pits and swales are to be installed so that nuisance water does not collect at low points. 

60. That gutters, downpipes and pits are to be connected to the stormwater management system for the site.

**Benefits**

- minimise external impacts of development.

**Guidance:**
Department of Environment and Heritage - Introduction to Urban Stormwater Management in Australia

4.3.2.1.8 SEDIMENT EXPORT

**Purpose**
To ensure, during the construction period, the implementation of measures to reduce the amount of sediment lost to the stormwater system.

**Criteria**
61. Measures used to reduce the amount of sediment lost to the stormwater system. Examples include:
- minimising the area of disturbance
- dust control to prevent wind erosion
- barriers to trap wind-blown and water-borne sediment, sand and litter
- stabilised site entry and exit points, and
- sensible positioning of material stockpiles.

**Benefits**
- minimise external impacts of construction activities.

**Guidance:**
Department of Environment and Heritage - Introduction to Urban Stormwater Management in Australia

4.3.2.1.9 LITTER REDUCTION

**Purpose**
To reduce the amount of litter entering the stormwater systems.

**Criteria**
62. Stormwater systems are designed to capture and remove all litter larger than 5mm in size.

**Benefits**
- protection and enhancement of environment.
- improved visual amenity.

**Guidance:**
4.3.2.10 LANDSCAPING FOR STORMWATER TREATMENT

Purpose
To treat all stormwater before re-entry to the common system and to reduce loadings by reducing peak stormwater flows.

Criteria
63. The integration of landscaped retention basins into the overall landscape design of the development. Optional

Benefits
• prevention of pollution entering waterways.
• protection & enhancement of the environment.
• improve visual amenity.

Guidance:
Department of Environment and Heritage - Introduction to Urban Stormwater Management in Australia

4.3.2.2 EMISSIONS (INCLUDING ATMOSPHERE & AIR QUALITY)

4.3.2.2.1 CONSTRUCTION ACTIVITY

Purpose
To minimise emissions from construction and demolition activities.

Criteria
64. Demonstrate the identification and use of methods for minimising air emissions and dust. Mandatory

Benefits
• reduction in air pollution.

4.3.2.2.2 URBAN HEAT ISLAND REDUCTION (SURFACE)

Purpose
To reduce local ambient temperature through heat, island technologies and practices.

Criteria
65. Provide tree cover to 30% of hard scape, including surface parking areas, walkways or hard surface areas. Optional

Benefits
• reduction in ambient surface temperatures.

Guidance:
Techport Australian Urban Design Guidelines
Appendix 1: Recommended Plant Species
4.3.2.3 LAND USE AND ECOLOGY

4.3.2.3.1 INDIGENOUS PLANTING

Purpose
To reduce irrigation demands through the use of indigenous species adapted to
the local climate and in support of habitat creation and the enhancement of local
biodiversity.

Criteria
66. 100% of all plants introduced to landscaped areas are
Mandatory
listed within Appendix A of the Techport Australia
Development Guidelines.

Benefits
• lower water use.
• lower garden maintenance.

Guidance:
Techport Australian Urban Design Guidelines
Appendix A: Plant Species for Techport Australia
Local indigenous plant lists for your area www.urbanforest.on.net

4.3.2.3.2 SOIL AMELIORATION

Purpose
To provide the foundation for ecologically sustainable development through the
conservation and sustainable use of soil.

Criteria
67. Retention of native soil on site.  Best Practice
68. Ameliorate or replace with soil of equal or better quality.  Best Practice

Benefits
• preservation and enhancement of local ecology.

Guidance:
Department of the Environment and Water Resources (Biodiversity, Soil and Ecologically Sustainable
Development)

Native Species means a plant species that is indigenous to Australia or an external
Territory. Indigenous Species of South Australia means a plant of a native plant
species from their known natural ranges within South Australia. Locally provenance
(area), locally indigenous or endemic means genetically adapted to a
particular locality.
4.3.2.4 WASTE

4.3.2.4.1 CONSTRUCTION WASTE MANAGEMENT

Purpose

The recycling of construction waste will contribute towards a reduction in the depletion of non-renewable resources and the level of solid waste entering landfill.

Criteria

69. Provision of a construction waste management plan. Mandatory
70. Demonstrate that at least 50% of non-hazardous construction and demolition debris will be salvaged and / or recycled. Mandatory

Benefits

• reduction in waste going to landfill.
• reduction in the depletion of non-renewable sources.

Guidance:
Zero Waste SA Website - Construction and Demolition Materials Fact sheet
Waste Management Association of Australia - Construction and Demolition Waste Best Practice Guidelines

4.3.2.4.2 CLEAN SITE

Purpose

To prevent pollution from building and construction sites entering our waterways and polluting our environment.

Criteria

71. Implementation of all applicable initiatives listed in the Mandatory
KESAB Clean Site Environmental Checklist under the headings of stormwater pollution prevention, waste management, resource recovery/recycling and other.

Benefits

• reduced clean up costs.
• reduced mud and dust problems.
• fewer public complaints.
• better image with community.
• cost savings due to reduced stock pile losses.

Guidance:
KESAB Clean Site
www.kesab.asn.au
KESAB Clean Site Environmental Checklist
4.3.3 OFFICE COMPONENT

Note: At least one optional item must be incorporated for office components less than 500 square metres. A minimum of four optional items must be incorporated for office components greater than 500 square metres.

4.3.3.1 ENERGY

4.3.3.1.1 GLAZING AND SHADING DEVICES

Purpose
To encourage developments to achieve best practice energy efficiency in order to reduce reliance on non-renewable energy sources.

Criteria

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
</tbody>
</table>

72. Shading devices have been placed on all external glass. | Mandatory | Mandatory |
73. Design to minimise glazing on the western façade of the building. | Mandatory | Mandatory |
74. Modified glass, such as low emissive glass window tinting and / or double glazing should be employed to reduce solar gain. | Mandatory | Mandatory |

Benefits
• energy cost savings.
• improved workplace conditions.
• reduction in greenhouse gas emissions.

Guidance:
Australian Government Greenhouse Website
Technical Manual Design for Lifestyle and the Future - Passive Design

4.3.3.1.2 RENEWABLE ENERGY – HOT WATER

Purpose
To encourage the supply of hot water demands by using solar or waste heat collection to reduce reliance on supply infrastructure in meeting hot water demands.

Criteria

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
</tbody>
</table>

75. Demonstrate the incorporation of solar hot water heating devices. | Best Practice | Optional |

Benefits
• energy cost savings.

Guidance:
Australian Government Greenhouse website - www.renewable.greenhouse.gov.au
4.3.3.1.3 LOW ENERGY APPLIANCES

**Purpose**

To encourage the installation of appliances with at least a 3-star energy rating to achieve best practice energy efficiency in the supply of appliances in industrial and commercial development.

**Criteria**

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
<tr>
<td>76. Demonstrate the installation of low energy appliances.</td>
<td>Best Practice Mandatory</td>
</tr>
</tbody>
</table>

**Benefits**

- energy cost savings.

4.3.3.1.4 SYSTEMS COMMISSIONING

**Purpose**

To encourage the assessment of the building systems to ensure they function and perform according to the energy rating.

**Criteria**

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
<tr>
<td>77. Engage the services of a third party commissioning authority to perform energy assessment on building systems.</td>
<td>Optional Mandatory</td>
</tr>
</tbody>
</table>

**Benefits**

- reduction of greenhouse gas emissions.
- potential to reduce energy costs.

4.3.3.2 WATER

4.3.3.2.1 WATER CONSERVATION

**Purpose**

To reduce the demands on potable water supplies and infrastructure by reducing peak demand and annual usage.

**Criteria**

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
<tr>
<td>78. 4-star WELS rated appliances, including toilets (specified 7.5L/min flow rates).</td>
<td>Mandatory Mandatory</td>
</tr>
<tr>
<td>79. Water meters for monitoring and reporting water consumption.</td>
<td>Mandatory Mandatory</td>
</tr>
</tbody>
</table>
Benefits

• lower water usage.
• cost savings through reduced water rates.

Guidance:
SA Water Website - Industry and Government Water Efficiency
Water Efficient Labelling and Standards (WELS) Scheme

4.3.3.3 INDOOR ENVIRONMENTAL QUALITY

4.3.3.3.1 LOW VOC / EMISSION MATERIALS

Purpose
To encourage the use of materials with less polluting elements to building interiors.

Criteria

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
</tbody>
</table>

80. The use of low VOC carpet.

81. The use of low VOC adhesives and sealants.

82. The use of low emission formaldehyde composite wood products.

83. The application of paints to internal walls that are:
   1. low emission type paints, and
   2. zero-volatile organic compound.

Benefits
• superior indoor air quality.
• fewer employee complaints.
• higher employee productivity.

Guidance:
Zero Waste SA - Green Office Fitout
4.3.3.2 THERMAL COMFORT

Purpose

To provide comfortable working environments within the buildings and to contribute towards a reduction in energy requirements from non-renewable sources.

Criteria

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Office Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 500 sqm</td>
<td>&gt; 500 sqm</td>
</tr>
</tbody>
</table>

84. Demonstrate the use of thermal insulation:
   - Mandatory
   - reflective (to protect against radiant heat), and
   - air pocket (to protect against transmissive heat).

85. Provision of a separate photocopy/printing room with dedicated exhaust.
   - Best Practice
   - Optional

Benefits

- energy cost savings.
- reduced energy consumption.
- reduction in greenhouse gas emissions.

Guidance:
CSIRO Website - Improving ventilation and thermal comfort in buildings

4.3.4 FACTORY / WAREHOUSE COMPONENT

4.3.4.1 EMISSIONS (INCORPORATING ATMOSPHERE AND AIR QUALITY)

4.3.4.1.1 REFRIGERANTS

Purpose

Refrigerants deplete the ozone layer, causing higher rates of skin cancer. Defence SA seeks to avoid refrigerants with a global warming potential or a ozone depletion potential from new developments.

Criteria

86. 95% of all refrigerants used should have a global warming potential (GWP) of zero.
   - Mandatory

87. 95% of all refrigerants used should have a ozone depletion potential (ODP) of zero.
   - Mandatory

88. 100% of all refrigerants used have a GWP=0 and an ODP=0.
   - Best Practice

Benefits

- reduction in damage to the ozone layer.
4.3.4.1.2 NOISE

Purpose
To minimise the nuisance factor of industrial warehouse activities associated with the movement of freight on local residential areas.

Criteria
89. All forklifts and other equipment used to load / unload freight to be fitted with a broadband sound reversing alarm.

Benefits
• alarm is directional and localised.
• concentration of sound within the immediate danger zone reducing chance of people ignoring warning.
• unique and distinctive sound dissipates more quickly than that of the pure tone at a similar decibel reading therefore reducing nuisance factor.

Guidance:
Forklift Action.Com
Department of Environment (Noise, Vibration and Air Blast Control)
4.4 INNOVATION

4.4.1 INNOVATIVE ESD TECHNOLOGY

Purpose
Defence SA expects that development of designs for buildings and the precincts will incorporate other best practice ESD initiatives that are not presently recognised in these ESD Performance Indicators. Defence SA encourages ESD solutions that are innovative and practical.

Criteria
90. Ownership of intellectual property and the demonstration of benefit to the environment for designs that contain original and innovative technology.  

91. Ownership of intellectual property and the demonstration of benefit to the environment for designs that utilise existing technology in a novel way.

4.4.2 ESD / ENERGY DESIGN PROFESSIONAL

Purpose
Achieving commercially viable ESD requires identification and design resolution of those initiatives which provide best environmental benefit for least investment. Often, this requires consideration of complex interactions that span traditional design team disciplines.

Criteria
92. Demonstrate the use of an ESD/energy specialist in the design process, including copies of their reports and recommendations.

4.4.3 PARTNERING PERFORMANCE

Purpose
The adoption of ESD in a manner that is commercially viable is often assisted by innovation methods of partnering with solution providers, or performance based contracts.

Criteria
93. Demonstrate partnering in energy performance contracts.

94. Demonstrate partnering with solution providers or neighbours in order to reduce reliance on non-renewable resources.
SECTION 5
APPENDICES
APPENDIX A
RECOMMENDED PLANT SPECIES

The following plant list gives preference to appropriate indigenous species and encourages diverse planting to retain the regional landscape character. The selected species also reduce the need for watering and the cost of maintaining the planting. The species can reduce the rising water tables, combat the spread of soil salinity and reclaim salt-affected areas. The South Australian Government has a planting indigenous species policy from which the following definitions are taken:

**Definitions:**

Native Species means a plant species that is indigenous to Australia or an external Territory.

Indigenous Species of South Australia means a plant of a native plant species from their known natural ranges within South Australia.

Locally provenance (area) or locally indigenous means genetically adapted to a particular locality.

This policy guides the use of appropriate indigenous species on new landscape developments.
**PLANT LIST FOR TECHPORT AUSTRALIA**

Plant from local provenance should be used where possible

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Height x Width at Maturity (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banksia integrifolia</td>
<td>‘Roller Coaster’ Banksia</td>
<td>0.3 x 1.5-2.5</td>
</tr>
<tr>
<td>*Carpobrotus rossii</td>
<td>Native Pigface</td>
<td>0.1-0.2 x 1-1.5</td>
</tr>
<tr>
<td>*Chrysocephalum apiculatum</td>
<td>Yellow Heads</td>
<td>0.2-0.3 x 0.2-0.3</td>
</tr>
<tr>
<td>*Dianella revoluta var. revoluta</td>
<td>Blank-Anther-Flax-Lily</td>
<td>0.3-1 x 0.5-2</td>
</tr>
<tr>
<td>Disphyma crassifolium</td>
<td>Round Leafed Pig Face</td>
<td>0.1-0.2 x 0.5-1.5</td>
</tr>
<tr>
<td>*Enchylaena tomentosa</td>
<td>Ruby Saltbush</td>
<td>0.3-1 x 0.5-1.5</td>
</tr>
<tr>
<td>Eremophila glabra</td>
<td>Rottnest Emu Bush</td>
<td>0.5 x 1-2</td>
</tr>
<tr>
<td>Eremophila ‘Kalbarri Carpet’</td>
<td>Kalbarri Carpet</td>
<td>0.3 x 2</td>
</tr>
<tr>
<td>Eutaxia obovata</td>
<td>Bacon and Egg Plant</td>
<td>1 x 1</td>
</tr>
<tr>
<td>Grevillea lanigera prostrate</td>
<td>Woolly Bush</td>
<td>0.3-0.4 x 1.5</td>
</tr>
<tr>
<td>Grevillea thelemanniana fr. Compact Green</td>
<td></td>
<td>0.5 x 1</td>
</tr>
<tr>
<td>*Isolepis nodosa</td>
<td>Knobby Club-Rush</td>
<td>0.5-1 x 0.5-2</td>
</tr>
<tr>
<td>*Kennedia prostrata</td>
<td>Scarlet Runner</td>
<td>0.1 x 1.5-4</td>
</tr>
<tr>
<td>*Kunzea pomifera</td>
<td>Muntries</td>
<td>0.2 x 2-4</td>
</tr>
<tr>
<td>*Leucophyta brownii</td>
<td>Cushion Bush</td>
<td>0.2-1 x 1.2</td>
</tr>
<tr>
<td>*Myoporum parvifolium</td>
<td>Creeping Boobialla</td>
<td>0.2 x 2</td>
</tr>
<tr>
<td>*Poa labillardieri var. labillardieri</td>
<td>Common Tussock-Grass</td>
<td>0.3-1 x 0.3-0.7</td>
</tr>
<tr>
<td>*Poa poiformis</td>
<td>Coast Tussock-Grass</td>
<td>0.6-1 x 0.5-1.5</td>
</tr>
<tr>
<td>Poa poiformis ‘Kingsdale’</td>
<td>Kingsdale</td>
<td>0.45 x 0.45</td>
</tr>
<tr>
<td>*Scaevola crassifolia</td>
<td>Cushion Fanflower</td>
<td>1 x 1</td>
</tr>
<tr>
<td>Scaevola ‘Mauve Clusters’</td>
<td>Fanflower</td>
<td>0.1-0.2 x 1-1.5</td>
</tr>
<tr>
<td>Westringia fruticosa ‘Zena’</td>
<td>Zena</td>
<td>0.9 x 0.9</td>
</tr>
<tr>
<td>Westringia ‘Jervis Gem’</td>
<td>Jervis Gem</td>
<td>1-1.2 x 1-1.5</td>
</tr>
<tr>
<td>Westringia ‘Smokey’</td>
<td>Smokey</td>
<td>1 x 1</td>
</tr>
</tbody>
</table>
# Plant List for Techport Australia

Plant from local provenance should be used where possible.

## Plants from 1-3 m to be used for screening and planting to sides of building

* endemic to area

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Height x Width at Maturity (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Alyxia buxifolia</em></td>
<td>Sea Box</td>
<td>1-3 x 1.2</td>
</tr>
<tr>
<td><em>Atriplex numularia</em></td>
<td>Old Man Saltbush</td>
<td>2-3 x 2.5</td>
</tr>
<tr>
<td><em>Calothamnus quadrifidus</em></td>
<td>Calothamnus</td>
<td>3 x 2.3</td>
</tr>
<tr>
<td><em>Correa alba</em></td>
<td>White Correa</td>
<td>1.2 x 1.3</td>
</tr>
<tr>
<td><em>Correa glabra</em></td>
<td>Rock Correa</td>
<td>2.3 x 1.3</td>
</tr>
<tr>
<td><em>Correa reflexa</em></td>
<td>Correa reflexa</td>
<td>2 x 1.5</td>
</tr>
<tr>
<td>Grevillea filloha 'Ellendale'</td>
<td>Grevillea Ellendale</td>
<td>2 x 2</td>
</tr>
<tr>
<td>Grevillea 'Lemon Supreme'</td>
<td>Grevillea Lemon Supreme</td>
<td>1.5 x 1.5</td>
</tr>
<tr>
<td>Grevillea 'Winpara Gold'</td>
<td>Grevillea Winpara Gold</td>
<td>2 x 2</td>
</tr>
<tr>
<td>Melaleuca nesophila 'Little Nessy'</td>
<td>Melaleuca Little Nessy</td>
<td>2 x 3</td>
</tr>
<tr>
<td><em>Olearia axillaris</em></td>
<td>Coast Daisy-Bush</td>
<td>2-3 x 1.5-2</td>
</tr>
<tr>
<td><em>Westringia eremicola</em></td>
<td>Native Rosemary</td>
<td>2-3 x 2.3</td>
</tr>
<tr>
<td><em>Westringia fruticosa</em></td>
<td>Coastal Rosemary</td>
<td>1.5 x 1.5</td>
</tr>
<tr>
<td>*Westringia 'Wynyabbie Gem'</td>
<td>Wynyabbie Gem</td>
<td>1.5-2 x 1.5-2</td>
</tr>
</tbody>
</table>

## Trees suitable for car park (shade)

* endemic to area

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Height x Width at Maturity (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Agonis flexuosa</em></td>
<td>Willow Myrtle</td>
<td>2-5 x 2.5</td>
</tr>
<tr>
<td><em>Allocasuarina verticillata (coastal)</em></td>
<td>Drooping Sheoak</td>
<td>5-8 x 4-6</td>
</tr>
<tr>
<td><em>Angophora costata</em></td>
<td>Smooth Barked Apple</td>
<td>10-20 x 10-15</td>
</tr>
<tr>
<td>Banksia integrifolia</td>
<td>Coast Banksia</td>
<td>8-10 x 2-6</td>
</tr>
<tr>
<td><em>Banksia marginata</em></td>
<td>Silver Banksia</td>
<td>2-8 x 1.5</td>
</tr>
<tr>
<td>Callistemon 'Kings Park Special'</td>
<td>Kings Park Special</td>
<td>4 x 4</td>
</tr>
<tr>
<td><em>Eucalyptus leucoxylon ssp. Megalocarpa</em></td>
<td>Large Fruited SA Blue Gum</td>
<td>6-12 x 4-6</td>
</tr>
<tr>
<td>Lagunaria patersonii</td>
<td>Norfolk Island Hibiscus</td>
<td>6 x 4</td>
</tr>
</tbody>
</table>
### PLANT LIST FOR TECHPORT AUSTRALIA

Plant from local provenance should be used where possible

#### Tall shrubs and trees suitable for planting to rear of building

*Endemic to area

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Height x Width at Maturity (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Callitris preisii</em></td>
<td>Southern Cypress Pine</td>
<td>7-14 x 3-6</td>
</tr>
<tr>
<td>Grevillea olivaceae fr. Orange</td>
<td>Orange Grevillea</td>
<td>2-4 x 2-4</td>
</tr>
<tr>
<td>Melaleuca halmaturorum</td>
<td>Coastal Paper-bark</td>
<td>2-6 x 2-6</td>
</tr>
<tr>
<td><em>Melaleuca linarifolia</em> ‘Snow in Summer’</td>
<td>Melaleuca Snow in Summer</td>
<td>5-8 x 2-4</td>
</tr>
<tr>
<td><em>Myoporum insulare</em></td>
<td>Common Boobialla</td>
<td>3-5 x 3-5</td>
</tr>
</tbody>
</table>
DEVELOPMENT SUBMISSION RESPONSE

As identified in the Introduction to the Development Guidelines - three copies of the completed Development Submission Response have to be submitted to the Project Manager. The Development Submission Response Sheets comprise of the standards identified within the Development Guidelines document. The standards are building controls that need to be met. The sheets are to be completed by indicating whether your proposal conforms with the standard by circling Y or N. If it does not conform with the standard, please explain – in the space provided – how else it achieves the objectives identified within the Urban Design Guidelines or the Ecologically Sustainable Development Guidelines.

Lot Number:  
Company Name:  Contact Number:  
Builder Name:  Contact Number:  

Your submission must include four copies of each of the following items:

- development submission response
- site analysis (including site and building levels)
- elevations and floor plans
- roof plans (including proposed plant)
- schedule of external materials
- signage plan
- car parking, circulation plan, access and egress plans
- stormwater management and earthworks plan
- landscape plan and planting schedule, and
- fencing and security plans.
## 2.1 PLANNING AND DESIGN PRINCIPLES

### 2.1.1 LAND USE

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>Please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is your business principally involved in the supply of goods or services to the naval and defence sectors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which of the following activities best describes a substantial part of your activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ research and development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ product development or improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ supply of technology-based products, or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ provision of specialist services to increase the capability of companies in the naval and defence industries</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.1.2 SITE COVERAGE, BUILDING ENVELOPE AND SETBACKS

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2.1 Setback - Street Frontage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1A. When onsite car parking is located between the street alignment and the building:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Is the main building line of the office component a minimum of 15m from the street frontage (excluding porticos &amp; verandah), and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Is there a 3-metre wide landscaped area provided adjacent to the street alignment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1B. When onsite car parking is located in an area other than between the street alignment and the building:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Is the building a minimum of 6m from the street frontage (excluding porticos &amp; verandah), and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Is space between the street alignment and the building landscaped?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2A. Where the factory / warehouse component does not incorporate an office component:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Is there a minimum of 8m from the street frontage when the space between the building and the street alignment is landscaped and on site car parking is elsewhere on the site?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2b. Where the factory / warehouse component does not incorporate an office component:
   - A maximum of 40m from the street frontage when on-site car parking is located adjacent to the street alignment

### 2.1.2.2 Setback – Side

For north/south orientated allotments – is there 10m to the western boundary and 6 metres to the east?

For east/west orientated allotments – is there 10m to the northern boundary and 6m to the south?

### 2.1.2.3 Setback – Rear

Is there a minimum of a 6m setback?

### 2.1.3 VEHICLE PARKING

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.1.3.1 Parking Amenities</strong></td>
<td>Yes / No / NA</td>
<td></td>
</tr>
<tr>
<td>1. For labour intensive industries:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Have you provided 0.75 car spaces for every employee (inclusive of office floor area)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. For non-labour intensive industries with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Up to 200m² of factory/warehouse space have you provided?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 3.3 spaces per 100m² office floor area +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 2 spaces per 100m² of factory/warehouse space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Between 200-2000m² of factory warehouse space have you provided?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 3.3 spaces per 100m² office floor area +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 2 spaces per ss100m² of factory/warehouse space up to 200m² +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1.33 spaces per 100m² of factory/warehouse space between 200m² and 2000m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Greater than 2000m² of factory warehouse space have you provided?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 3.3 spaces per 100m² office floor area +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 2 spaces per 100m² of factory warehouse space up to 200m² +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1.33 spaces per 100m² of factory/warehouse space between 200m² and 2000m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 0.67 spaces per 100m² factory/warehouse space over 2000m²</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicate the number of square metres of the factory/warehouse space: 

| __________ | | |

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79
### 2.2 BUILDING DESIGN PRINCIPLES

#### 2.2.1 BUILDING DESIGN, APPEARANCE, HEIGHT AND SCALE

<table>
<thead>
<tr>
<th>Standard</th>
<th>&quot;Adopted&quot; Yes / No / NA</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.2.1.1 Building Design and Appearance – Office / Administration Component</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Is the office / administration component located at the front of the building?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Does the office / administration component have a designated, high legible and directly accessible entry point?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Does the office / administration component include a canopy or verandah over the designated point?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Has the office / administration component been designed as a contemporary office / industrial building forming an integral part of the overall building?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does the office / administration component form an integral part of the overall building design?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Does the office / administration component incorporate a higher level of detailing than the main factory / warehouse component?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Does the office / administration component utilise industrial materials and design elements?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Does the office / administration component include parapet detailing and substantial relief design to large expenses of walls?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.2.1.1 Building Design and Appearance

#### Factory/Warehouse Component

1. Has any factory / warehouse component fronting roads or public spaces have a stepped façade or building line to create a minimum of 300mm shadow line?

2. Does the factory/warehouse component fronting roads and / or public spaces have façade articulation or relief elements?

3. Does the factory/warehouse component fronting roads and / or public spaces have external elements such as feature downpipes and rainwater heads?

#### Security Points / Guard Houses

1. Is the construction of the security / guardhouse reflective of the main building and does it include the architectural detail listed above?

#### Security Points / Guard Houses

- Have the following CPTED principles been adopted:
  1. avoidance of extensive blank walls at ground level
  2. maximised the number of entries to the building from the street, and
  3. enabled passive surveillance of streets and car parks by providing windows in buildings?

#### Building Height and Scale

1. Is the height of the factory / warehouse element no more than double the height of the office/administration component? If yes:
   - does the factory / warehouse element have suitable architectural component included?

2. Does the building minimise overshadowing of useable outdoor space on the subject and adjacent sites?
### 2.2.2 MATERIALS AND FINISHES

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has a variety of building finishes been used to highlight areas or features of design components?</td>
<td>Yes / No / NA</td>
<td></td>
</tr>
<tr>
<td>2. Are materials of low reflectivity to minimise glare to adjacent sites?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.2.3 ROOF LINES

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the roof line of a type that screens roof mounted plant and equipment?</td>
<td>Yes / No / NA</td>
<td></td>
</tr>
</tbody>
</table>

### 2.2.4 ACCESS AND LOADING AREAS

#### 2.2.4.1 Access

1. Development designed to enable vehicles to enter and leave the site in a forward direction? | |
2. Will ‘B-double’ trucks access your property?  
   If yes, please provide a traffic engineer’s report with your submission | Report attached Y/N |
3. Have crossovers been built to the City of Port Adelaide Enfield’s technical specifications? | |
4. Are pedestrian paths separated from access and loading areas? | |

#### 2.2.4.2 Loading Areas

1. Are the loading areas located to the rear of allotments? | |
2. Are your loading areas screened from view from main road frontages? | |

### 2.2.5 STORAGE, WASTE MANAGEMENT AND SERVICE AREAS

#### 2.2.5.1 Storage and Service Areas

General storage and service areas:  
Have general storage and service areas been:  
1. located away from the main road setback  
2. suitably screened through both physical built form and landscaping, and  
3. screened from neighbouring allotments?
<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant and Equipment areas:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Have plant and equipment areas been located adjacent to the front entrance area?</td>
<td>If yes, please comment</td>
<td></td>
</tr>
<tr>
<td>2. Have plant and equipment areas been set back to minimise visual conflict with the streetscape?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Storage of Chemicals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. For the storage of chemicals and materials (including loading areas) - have containment facilities been incorporated into the design of areas where loading, unloading or storage of chemicals &amp; materials occur?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do those containment facilities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- have adequate capacity to contain spills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- have walls and floors of impervious construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- include a waste retaining sump, holding tank or pumping sump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- have adequate access for the removal of water or spilt materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- have adequate signage, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- have adequate protection / security from the public?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shipping container storage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Will you be storing containers on site?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are / Will container(s) or container storage areas:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. set back at least 3 metres from the boundaries, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. visible from or located on the street frontage?</td>
<td></td>
<td>If yes, please comment</td>
</tr>
<tr>
<td>2. Will stored container stacks be:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. stacked less than six containers high</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. secured appropriately, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. stacked in a pyramid formation from the boundaries with the closest tier to the boundary not exceeding the height of one container?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.2.5.2 Waste Management

1. Are waste recycling areas designated and appropriately screened?

2. Are waste areas:
   a. located so as not to cause offence to the public
   b. protected and secured from public access
   c. located adjacent to street boundary (if yes, please comment), and
   d. located away from stormwater drains?

### 2.2.6 LIGHTING

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted” Yes / No / NA</th>
<th>If no, please comment</th>
</tr>
</thead>
</table>
| 1. Has external lighting been provided to avoid dark spots:  
   a. around doorways, windows and pedestrian pathways  
   b. in areas where goods and equipment are stored, and  
   c. in all car parking areas? | | |
| 2. Has lighting been appropriately directed or had baffles installed to prevent illumination of adjacent properties or residential areas? | | |
| 3. Does all lighting meet the relevant Australian Standards? | | |
| 4. Are car parks and entrances adequately illuminated for safe after-hours access and egress? | | |
| 5. Has adequate lighting been provided to meet security requirements without excess energy consumption? | | |
### 2.3 FENCING PRINCIPLES

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is your fencing visually unobtrusive and complements the streetscape?</td>
<td>Yes / No / NA</td>
<td></td>
</tr>
<tr>
<td>2. Has your fencing been integrated into the overall design of the development and associated security structures?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Do your gates, security structures and letterboxes complement fencing and overall design of the development?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Has concrete plinthing, between 150 and 300mm high been applied to the bottom of all tubular fencing?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is all tubular fencing colorbond ‘grey ridge’?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2.3.1 Front Fencing

1. Is the front of the premises open and does it provide a sense of address and contribute to the streetscape?

2. Is the front fencing:
   - made from powder coated black steel (or an approved alternative)
   - post and rail type fencing
   - visually transparent, and
   - no more than 2.4 metres in height.

#### 2.3.2 Side and Rear Fencing

1. Is side and rear site security fencing constructed of black plastic coated ‘chain-link’ fence or an approved alternative?

2. Is non-security related side and rear fencing constructed from ‘grey ridge’ colorbond sheet fencing?

3. Is the side or rear fencing larger than 2.4 metres in height?

### 2.4 LANDSCAPING DESIGN PRINCIPLES

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted”</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is 100% of the planting reflective of the species provided for in these Development Guidelines Appendix A?</td>
<td>Yes / No / NA</td>
<td></td>
</tr>
<tr>
<td>2. Has a minimum of 10% of the site been landscaped?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Have any lawn or turfed areas that are not irrigated from onsite water storage been kept to a minimum?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Have trees been selected and positioned to take account of the height and scale of the building?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>“Adopted”</td>
<td>If no, please comment</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>2.4.1 Landscaping of street frontages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Do plantings allow views through to buildings from the street?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Does landscaping adjacent to the front fencing form a dense screen?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.4.2 Landscaping of side and rear boundaries</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Is at least 50% of that landscaping adjacent to allotment boundaries suitable for screening?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Have allotment boundaries been landscaped with suitable species for screening purposes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Has vegetation to the northern and western allotment boundaries been planted with vegetation to mitigate against the hot summer northerly winds and afternoon sun during summer periods?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does vegetation to the southern and eastern boundaries permit filtration to allow prevention of cooling prevailing winds and morning sun to buildings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.4.3 Landscaping of Car Parks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Are landscape beds adjacent to car parks a minimum of 1.8 metres wide?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Have high canopy trees been used for shade within car parking areas?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Have low/groundcover varieties to a maximum height of 700mm been used to allow clear lines of sight within the car park and to internal site access pathways?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Has a minimum of one shade tree per eight parking bays within the car park been provided?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Has suitable landscaping adjacent to car parks been provided to provide shade and soften expansive hard areas?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Have landscaped medians and traffic island been incorporated within the car park?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.4.4 Landscaping for Security</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the landscaping adhere to the CPTED principles, including:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. the creation of clear sight lines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. the creation of clear and safe routes for access &amp; egress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. conveying order and maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. assisting in the definition of space, and</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.4.5 Landscaping of Service and Storage Areas

1. Has service and storage areas been suitably landscaped with screening plants?

### 2.5 SIGNAGE PRINCIPLES

<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted” Yes / No / NA</th>
<th>If no, please comment</th>
</tr>
</thead>
</table>
| 1. Does your site provide for:  
a. building façade signage, and / or  
b. tenant entry point signage | | Please indicate type of signage |
| 2. Does the tenant signage identify the site / building so that it can be read from the street or footpath during the day and night? | | |
| 3. Is the tenant signage:  
a. constructed of durable materials  
b. with Approved UV stabilised colours, and  
c. if illuminated, internally lit or directionally lit in accordance with criteria 17 Light-spill in Section 3.3.0.1? | | |
| 4a. Frontage less than 50 metres:  
· does total height exceed the maximum of 6m and the total area of the sign face exceed a maximum of 6 square metres? | If yes, please comment |
| 4b. Frontage greater than 50 metres:  
· does total height increase more than the 1m maximum for every additional 10m of street frontage?  
· does the area of the sign face increase more than the 1 square metre maximum for every additional 10m of street frontage?  
· is any additional free standing signage more than 6 metres in height and 6 square metres in area? | If yes, please comment |
| 5. Is building façade signage:  
a. located on the front facia side of the building only (excluding corner allotments)  
b. integrated with the overall architectural design of the building  
c. simple in form, structure and colour  
d. located above parapet level, and  
e. exceeding 5% of any one frontage in area? | If yes, please comment |
<p>| 6. Is signage limited to the name and insignia of the firm occupying the site? | If yes, please comment |
| 7. Does signage include any of the following: | If yes, please comment |</p>
<table>
<thead>
<tr>
<th>Standard</th>
<th>“Adopted” Yes / No / NA</th>
<th>If no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. third party signage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. flashing or animated signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. bunting, streamers, flags or wind vanes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. sandwich boards or other mobile signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. A-frame signage, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. post mounted signs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Does the signage meet the requirements outlined in the *Port Adelaide Enfield City Development Plan and Guidelines*? |
ECOLOGICALLY SUSTAINABLE DEVELOPMENT

In order to comply with the development requirements stipulated within the section, Ecological Sustainable Development a minimum number of ‘optional’ initiatives must be included in development. The number required is indicated at the start of the relevant ESD subsections.

4.2 COMMERCIAL DEVELOPMENT

At least one ‘optional’ ESD initiative must be included in the development from section 4.2 Commercial Development.

### 4.2.1 GREEN STAR DESIGN RATING

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted”</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Star 5 Star</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. The achievement, through a desktop audit by an accredited Green Star Professional, of a minimum of a 5-star Green Star Green Building Council of Australia rating.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>Green Star 6 Star</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The achievement of a minimum of 6-star Green Star Green Building Council of Australia rating certification.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.2 ENERGY

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted”</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.2.2.1 Passive Solar Design</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The building orientation takes account of summer and winter solar patterns.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.2.2.2 Lighting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Use of high efficiency light fittings and electronic ballasts, with smart lighting control systems which utilise motion detection and daylight sensing on/off or dimmer control.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>5. Design to maximise daylight penetration in order to reduce dependence on artificial lighting systems.</td>
<td></td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td><strong>4.2.2.3 Renewable Energy – Hot Water</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Demonstrate the incorporation of solar or gas hot water heating devices.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>7. Demonstrate the use of co-generation in the generation of hot water.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
<tr>
<td>Initiative / Demonstrate</td>
<td>“Adopted” Yes / No / NA</td>
<td>Classification</td>
<td>For mandatory items, if no, please comment</td>
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</tr>
<tr>
<td><strong>4.2.2.4 Low Energy Appliances</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8. Demonstrate the installation of low energy appliances with MEPS 4 star minimum standard.</td>
<td></td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td><strong>4.2.2.5 Renewable Energy – Electricity (Photovoltaic Solar Cells or Wind generation equipment)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Demonstrate the installation of solar panels on the north side of roofs or façade or wind generation equipment that has been connected to the grid.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
<tr>
<td><strong>4.2.2.6 ‘Low energy use’ cooling systems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Demonstrate the installation of a new generation cooling system, such as chilled ceilings / beams.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
</tbody>
</table>

**4.3 INDUSTRIAL DEVELOPMENT**

Note: A minimum of 3 ‘optional’ ESD initiatives must be included in the development from Section 4.3

**4.3.1 INDUSTRIAL BUILDING (OFFICE AND FACTORY/WAREHOUSE) DEVELOPMENT**

**4.3.1.1 Energy**

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted” Yes / No / NA</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3.1.1.1 Passive Design</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. The building orientation takes account of prevailing wind and rain patterns.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>12. The building orientation takes account of summer and winter solar patterns.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.1.1.2 Lighting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Use of high efficiency light fittings, with smart lighting control systems which utilise motion detection and daylight sensing on/off or dimmer control.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>14. Design to maximise daylight penetration in order to reduce dependence on artificial lighting systems.</td>
<td></td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.1.1.3 Renewable Energy – Electricity (Photovoltaic Solar cells or Wind generation equipment)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Demonstrate the installation of solar panels on the north side of roofs or façade or wind generation equipment that has been connected to the grid.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
</tbody>
</table>
### 4.3.1.2 Land Use and Ecology

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
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<tbody>
<tr>
<td></td>
<td>Yes / No / NA</td>
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</tbody>
</table>

#### 4.3.1.2.1 Landscaping

16. Vegetation has been strategically placed to minimise direct sunlight on buildings and thermal loading.  
    Mandatory

#### 4.3.1.2.2 Light Spill

17. No direct beam light to carry beyond the site boundaries or upwards without falling directly on a surface with the explicit purposes of illuminating the surface.  
    Mandatory

#### 4.3.1.2.3 Outdoor Breakout / Passive Recreation Areas

18. Provision of shaded external meeting and breakout / passive recreation areas for use by employees.  
    Best Practice

### 4.3.1.3 Indoor Environmental Quality

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
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<tbody>
<tr>
<td></td>
<td>Yes / No / NA</td>
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</tbody>
</table>

#### 4.3.1.3.1 Natural / Cross Ventilation in Buildings

19. A dual aspect building design to promote natural cross ventilation.  
    Mandatory

20. The provision of operable windows.  
    Mandatory

21. The use of roof and gable vents.  
    Mandatory

22. Operable louvres have been included in window design to provide natural ventilation effectiveness.  
    Optional

#### 4.3.1.3.2 Natural Lighting

23. Demonstrate the use of natural daylight to all general working spaces within the building.  
    Optional
### 4.3.1.4 Waste

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted” Yes / No / NA</th>
<th>Classification</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3.1.4.1 Recycling Facilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Separated waste facilities are indicated on all plans.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>25. Facilities are easily accessible by building users and removal vehicles.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>26. Recycling facilities provided have sufficient capacity to service the needs of the building and its intended users.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.1.4.2 Disposal of waste and refuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Demonstrate that waste and rubbish will be recycled where possible.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
</tbody>
</table>

### 4.3.1.5 Building Materials

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted” Yes / No / NA</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3.1.5.1 Recycled Materials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. The use of recycled materials in the built form.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>29. The use of recycled materials in car park site preparations.</td>
<td></td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.1.5.2 PVC Minimisation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Design and specify alternatives to PVC for drainage where there is a practical and sustainable alternative product.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>31. Design and specify alternatives to PVC for cables and / or finishes where there is practical and sustainable alternative product.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.1.5.3 Plantation Timber</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. That 95% of timber used in construction activities is from sustainable plantations or recycled.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.1.5.4 Local Materials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Demonstrate a minimum of 10% (based on $ value) of materials to be harvested, manufactured, supplied and sourced from within 800km of the project.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
4.3.1.6 Transport

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted” Yes / No / NA</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
</table>

### 4.3.1.6.1 Pedestrian and Cyclist Activities

34. Provision of direct integration with footpaths and walking routes. **Mandatory**

35. Provision of bike storage and showering / changing facilities for cyclists. **Mandatory**

### 4.3.1.6.2 Vehicle Parking

36. Provision of priority parking for employees driving ultra low emission vehicles. **Optional**

37. Provision priority parking for carpool ride sharing. **Optional**

### 4.3.1.6.3 Access to Alternative Transport

38. Development is located within 800m of a railway station. **Optional**

39. Development is located within 800m of a bus stop. **Optional**

### 4.3.1.6.4 Inner Precinct Travel

40. The provision of company bicycles for use by staff members to attend meetings or make deliveries within the precinct. **Best Practice**

### 4.3.1.6.5 ‘Greener’ Transport Operations

41. The provision of forklifts for loading and unloading activities that are powered by bio-fuel or battery powered (applies only to those operations requiring the use of a forklift). **Mandatory**
### 4.3.2 INDUSTRIAL SITE DEVELOPMENT COMPONENT

A minimum of 3 ‘optional’ ESD initiatives must be included in the development from Section 4.3.2 Industrial Site Development.

#### 4.3.2.1 Water

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted”</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3.2.1.1 Stormwater Retention and Reuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. The retention and re-use of stormwater onsite through the use of landscaped drainage swales and bio-retention pits to car parks and hard stand areas.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>43. The retention of rainwater onsite.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>44. Stormwater run-off is directed from sealed surfaces to landscaped areas or drainage swales.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>45. The capture and re-use of water for site irrigation.</td>
<td></td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>46. Re-use of treated stormwater for connection to sanitary flushing systems and landscaped areas.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.2.1.2 Water-wise Landscaping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. Demonstrate a minimisation of irrigated grass / turfed areas, where not supported by waste water collection systems.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>48. Demonstrate the use of sub soil irrigation and mulch.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>49. Demonstrate the use of rainwater tanks for watering.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>50. Demonstrate the use of water-wise plant species as detailed in Appendix A of the Techport Australia Urban Design Guidelines.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>51. The use of automatic timers with moisture sensor override.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.2.1.3 Reduced Paving and Impervious Surfaces</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. “Overflow” or infrequently used parking areas are constructed with porous pavement (if vehicle load limits permit).</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>53. Demonstrate the use of permeable paving materials for car park surfaces to reduce water run-off.</td>
<td></td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.2.1.4 Minimise Nuisance to Adjacent Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54. Demonstrate that the development is designed so that overflows do not adversely affect neighbouring properties by way of intensification, concentration or inappropriate disposal across property boundaries.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>Initiative / Demonstrate</td>
<td>“Adopted” Yes / No / NA</td>
<td>Classification</td>
<td>For mandatory items, if no, please comment</td>
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</tr>
<tr>
<td><strong>4.3.2.1.5 Rainwater Tanks</strong></td>
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</tr>
<tr>
<td>55. The installation of rainwater tanks that are connected to all sanitary flushing systems.</td>
<td></td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td>56. Rainwater tanks to be a minimum of 4500L.</td>
<td></td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td><strong>4.3.2.1.6 Fire System Water Consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. There is sufficient temporary storage for fire protection system test water and maintenance drain-downs for re-use on site.</td>
<td></td>
<td></td>
<td>Best Practice</td>
</tr>
<tr>
<td><strong>4.3.2.1.7 Building Surface Levels</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58. That surface levels are graded such that sites are generally free draining with sufficient overflow capacity to ensure that waters do not enter buildings when underground drainage systems are beyond their capacity.</td>
<td></td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td>59. That drainage pits and swales are to be installed so that nuisance water does not collect at low points.</td>
<td></td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td>60. That gutters, downpipes and pits are to be connected to the stormwater management system for the site.</td>
<td></td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td><strong>4.3.2.1.8 Sediment Export</strong></td>
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</tbody>
</table>
| 61. Measures used to reduce the amount of sediment lost to the stormwater system. Examples include:  
  ▪ minimising the area of disturbance  
  ▪ dust control and wind erosion  
  ▪ barrier to trap wind-blown sediment, sand and litter  
  ▪ stabilised entry and exit points, and  
  ▪ positioning of stockpiles such as sand. | | | Mandatory |
| **4.3.2.1.9 Litter Reduction** |                         |                |                                             |
| 62. Stormwater systems are designed to capture and remove all litter larger than 5mm in size. | | | Mandatory |
| **4.3.2.1.10 Landscaping for Stormwater Treatment** |                         |                |                                             |
| 63. The integration of landscaped retention basins into the overall landscape design of the development. | | | Optional |
### 4.3.2.2 Emissions (including Atmosphere and Air Quality)

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted” Yes / No / NA</th>
<th>Classification</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3.2.2.1 Construction Activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64. Demonstrate the identification and use of methods for minimising air emissions and dust</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.2.2.2 Urban Heat Island Reduction (Surface)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65. Provide tree cover to 30% of hard scape, including surface parking areas, walkways or hard surface areas.</td>
<td></td>
<td>Optional</td>
<td></td>
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</tbody>
</table>

### 4.3.2.3 Land Use and Ecology

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
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<th>Classification</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3.2.3.1 Indigenous Planting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66. 100% of all plants introduced to landscaped areas to be indigenous to the local area.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td><strong>4.3.2.3.2 Soil Amelioration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>67. Retention of native soil on site.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
<tr>
<td>68. Ameliorate or replace with soil of equal or better quality.</td>
<td></td>
<td>Best Practice</td>
<td></td>
</tr>
</tbody>
</table>

### 4.3.2.4 Waste

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
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</thead>
<tbody>
<tr>
<td><strong>4.3.2.4.1 Construction Waste Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>69. Provision of a construction waste management plan.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>70. Demonstrate that at least 50% of non-hazardous construction and demolition debris will be salvaged and / or recycled.</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>71. Will you implement all applicable initiatives listed in the KESAB ‘Clean Site’ Environmental Checklist under the headings of: • stormwater pollution prevention • waste management resource recovery/recycling, and • other</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
</tbody>
</table>
4.3.3 **OFFICE COMPONENT**

At least one ‘optional’ ESD initiative must be included in the development from Section 4.3.3 Office Component (<500sq m). A minimum of four ‘optional’ ESD initiatives must be included in the development from Section 4.3.3 Office Component (>500 sq m)

### 4.3.3.1 Energy

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted”</th>
<th>Classification for Office Space</th>
<th>For mandatory items, if no, please comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes / No / NA</td>
<td>&lt; 500 sq m</td>
<td>&gt; 500 sq m</td>
</tr>
</tbody>
</table>

#### 4.3.3.1.1 Glazing and Shading Devices

72. Shading devices have been placed on all external glass.  
73. Has glazing on the western façade of the building been minimised?  
74. The installation of modified glass to reduce solar gain.

#### 4.3.3.1.2 Renewable Energy – Hot Water

75. The incorporation of solar hot water heating devices.  
76. The installation of low energy appliances.

#### 4.3.3.1.3 Low Energy Appliances

77. The engagement of the services of a third party commissioning authority.

#### 4.3.3.1.4 Systems Commissioning

### 4.3.3.2 Water

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Yes / No / NA</td>
<td>&lt; 500 sq m</td>
<td>&gt; 500 sq m</td>
</tr>
</tbody>
</table>

#### 4.3.3.2.1 Water Conservation

79. The installation of 3-star WELS rated appliances (specified 7.5L/min flow rates) including toilets.  
80. The installation of water metres for monitoring and reporting water consumption.
### 4.3.3.3 Indoor Environmental Quality

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
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<td></td>
<td></td>
<td>&lt; 500 sq m</td>
<td>&gt; 500 sq m</td>
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</table>

#### 4.3.3.1 Low VOC / Emission Materials

<table>
<thead>
<tr>
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<td>&lt; 500 sq m</td>
<td>&gt; 500 sq m</td>
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</tbody>
</table>

- 80. The use of low VOC carpet. [Best Practice] [Optional]
- 81. The use of low VOC adhesives and sealants. [Best Practice] [Optional]
- 82. The use of low emission formaldehyde composite wood products. [Best Practice] [Optional]
- 83. The application of paints to internal walls that are:
  - a. low emission type paints, and
  - b. zero-volatile organic compound. [Best Practice] [Optional]

#### 4.3.3.2 Thermal Comfort

<table>
<thead>
<tr>
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<td>&lt; 500 sq m</td>
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</tbody>
</table>

- 84. The use of thermal insulation. [Mandatory] [Mandatory]
- 85. The provision of a separate photocopy / printing room with dedicated exhaust. [Best Practice] [Optional]

### 4.3.4 FACTORY / WAREHOUSE COMPONENT

#### 4.3.4.1 Emissions (incorporating atmosphere and air quality)

<table>
<thead>
<tr>
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<th>Classification</th>
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#### 4.3.4.1.1 Refrigerants

<table>
<thead>
<tr>
<th>Initiative / Demonstrate</th>
<th>“Adopted” Yes / No / NA</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Mandatory</td>
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</tbody>
</table>

- 86. That 95% of all refrigerants used have global warming potential (GWP) of zero. [Mandatory]
- 87. That 95% of all refrigerants used have ozone depletion potential (ODP) of zero. [Mandatory]
- 88. That 100% of all refrigerants used have GWP=0 and a ODP=0. [Best Practice]

#### 4.3.4.1.2 Noise

<table>
<thead>
<tr>
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<td>Mandatory</td>
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</table>

- 89. All forklifts and other equipment used to load/unload freight to be fitted with a broadband sound reversing alarm. [Mandatory]
## 4.4 Innovation

<table>
<thead>
<tr>
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<th>Classification</th>
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<tbody>
<tr>
<td>4.4.1 Innovative ESD Technology</td>
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<td></td>
<td>90.</td>
<td>Best Practice</td>
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<tr>
<td>Ownership of intellectual property and the demonstration of benefit to the environment</td>
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<tr>
<td>for designs that contain original and innovative technology.</td>
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<tr>
<td></td>
<td>91.</td>
<td>Best Practice</td>
<td></td>
</tr>
<tr>
<td>Ownership of intellectual property and the demonstration of benefit to the environment</td>
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<tr>
<td>for designs that utilise existing technology in a novel way.</td>
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<tr>
<td>4.4.2 ESD / Energy Design Professional</td>
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<tr>
<td></td>
<td>92.</td>
<td>Best Practice</td>
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</tr>
<tr>
<td>Demonstrate the use of an ESD/energy specialist in the design process, including</td>
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<td>copies of their reports and recommendations.</td>
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<tr>
<td>4.4.3 Partnering Performance</td>
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<td></td>
<td>93.</td>
<td>Best Practice</td>
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<tr>
<td>Demonstrate partnering in energy performance based contracts.</td>
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<tr>
<td></td>
<td>94.</td>
<td>Best Practice</td>
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<tr>
<td>Demonstrate partnering with solution providers or neighbours in order to reduce</td>
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<tr>
<td>reliance on non-renewable resources.</td>
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Acknowledgements

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- City of Port Adelaide
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- Hassell Ltd

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