



Part B – Land Use Based Controls

# Chapter B5: Industrial Development

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## 1 INTRODUCTION

1. This chapter of the DCP provides the objectives and detailed controls for the subdivision of industrial land and industrial development and should be read in conjunction with the relevant LEP applying to the subject site..
2. This chapter of the DCP applies to land zoned either: IN1 General Industry, IN2 Light Industrial, IN3 Heavy Industrial and IN4 Working Waterfront under the relevant LEP.
3. This chapter of the DCP also applies to any light industry or warehouse or distribution centre proposed upon land zoned B6 Enterprise Corridor.
4. It is also recommended that prospective applicant's also refer to the Subdivision Code which provides the detailed design and construction requirements for roads, stormwater drainage and other infrastructure works.

## 2 OBJECTIVES

1. The objectives of this chapter of the DCP are:
  - (a) To preserve core industrial lands to meet the current and future needs of the Illawarra Region.
  - (b) To minimise the fragmentation of land in industrial areas, particularly the Port Kembla heavy industrial area and the Unanderra industrial area to enable the future establishment of port related industries and large-scale warehouse distribution facilities.
  - (c) To accommodate industrial development which produces a range of goods and provides employment without adversely affecting the amenity, health or safety of any adjoining residential area.
  - (d) To encourage a high standard of aesthetically pleasing and functional industrial developments that sympathetically relate to adjoining and nearby developments.
  - (e) To encourage modern forms of general industrial, light industrial, warehousing, high technology and research and the like development within industrial areas of the City.
  - (f) To reduce the visual impact of industrial development on the streetscape and surrounding areas.
  - (g) To ensure open storage areas are properly screened to minimise any adverse visual effects of the development.
  - (h) To ensure that fencing and walls for security purposes have positive impacts on the streetscape and public domain areas.
  - (i) To encourage water sensitive urban design measures, wherever practicable and to ensure stormwater run-off is satisfactorily catered for.
  - (j) To ensure that employment premises incorporate the principles of Ecologically Sustainable Development.

### 3 FACTORY / WAREHOUSE DISTRIBUTION CENTRE BUILDING DESIGN REQUIREMENTS

#### 3.1 Building Setbacks

##### 3.1.1 Objectives

- (a) To enhance the visual quality of industrial development through appropriate setbacks together with appropriate building and landscape design, particularly when viewed from public roads and other public domain areas.
- (b) To minimise the visual impact of factory / warehouse distribution centre buildings upon the streetscape of the surrounding locality.
- (c) To create a pleasant environment within and external to the site.
- (d) To ensure satisfactory amenity and privacy levels are maintained for any adjoining sensitive land uses such as a residential land use.

##### 3.1.2 Development Controls

1. The minimum front building line setback for all buildings fronting a public road shall be in accordance with the following table:

**Table 1: Minimum Front Building Line Setbacks for Factory/ Warehouse Distribution Centre Buildings**

Road Classification	Minimum Front Building Line Setback (Primary Road Frontage)
Arterial Road	20 metres
Sub-Arterial Road	15 metres
Collector Road	10 metres
Local Road	7.5 metres

2. The minimum secondary road building line setback for all buildings on corner or dual frontage sites shall be in accordance with the following table:

**Table 2: Minimum Secondary Road Setbacks for Buildings on Corner or Dual Frontage Sites**

Road Classification	Minimum Building Line Setback for Secondary Road Frontage (Corner Lot or Dual Frontage Lot)
Arterial Road	7.5 metres
Sub-Arterial Road	5 metres
Collector Road	5 metres

Local Road

5 metres

## **4 BUILDING DESIGN / FAÇADE TREATMENT**

### **4.1.1 Objectives**

- (a) To achieve a high standard of industrial development by promoting visually attractive buildings and through the use of high quality external finishes.
- (b) To encourage a range of architectural design elements and innovative roof forms for industrial buildings, in order to improve the visual interest and attractiveness of such buildings.
- (c) To promote functional, safe and environmentally friendly industrial development.

### **4.1.2 Development Controls**

1. The external front façade of all buildings fronting public roads shall be of a high quality glass, decorative finished concrete or face brick construction. This external façade treatment shall incorporate a minimum 6 metre return around the sides of the building. Alternatively, colorbond wall materials may be used for up to 50% of the total front façade of the building with the remaining 50% of the façade being of a glass, decorative finished concrete or face brick construction.
2. The maximum reflectivity of any glazing shall not exceed 20%, in order to minimise any potential glare impacts.
3. The submission of a schedule of proposed external building materials and finishes is required with the Development Application.
4. Large unrelieved expanses of walls or building mass are required to be broken up through building articulation, vertical and horizontal modulation and / or alternative architectural enhancements, in order to provide visual interest to the building.
5. Other architectural elements or treatments may include (but are not limited to) the following:
  - (a) Varied building materials and external finishes on the building façade;
  - (b) Roof forms and parapets to create an interesting skyline;
  - (c) Vertical fin walls;
  - (d) Sun shading devices; and
  - (e) Public art works on the building and in front of the building.
6. Any proposed building on a dual road frontage lot will be required to be designed to incorporate varied architectural features for both road frontages with the building being orientated towards the major road frontage.
7. Buildings located on corner allotments shall be designed to address both street frontages in terms of façade treatment and articulation of the building and the roofline form. Any building on a corner lot must incorporate architectural corner features to add visual interest to the building.
8. Where blank walls on street frontages are unavoidable for new buildings, the building shall feature decorative wall elements and / or vertical fin elements to provide visual interest.

9. The placement of roller shutters, loading docks and other building openings shall wherever possible be provided at the rear or side of the building.
10. Showroom display areas, ancillary offices and other low – scale elements should be, wherever practicable, located at the front of the building and constructed of glass, decorative finished concrete or face brick materials.
11. The main entry to the building shall be easily identifiable from the road and directly accessible from the front of the building or driveway in the case of a multi-unit complex.
12. Large floor plate buildings must provide an open face to the public domain, especially at road level.
13. Buildings should incorporate decorative roof elements and avoid bulky roof forms.
14. Roofing materials should be constructed of low reflective materials and / or finishes wherever possible.
15. All roofing shall be provided with adequate guttering and downpipes which discharge to an open grated surface inlet pit for subsequent discharge to Council's stormwater drainage system or as part of a Water Sensitive Urban Design solution.
16. All rooftop or exposed structures including plant rooms, air conditioning, ventilation and exhaust systems are to be suitably screened and integrated with the building in order to guarantee an integrated appearance.
17. All building construction shall comply with the requirements of the Building Code of Australia and in particular, fire egress and fire safety requirements.
18. Natural lighting must be incorporated into the design for large-scale factory or warehouse distribution buildings.



**Figure 1: (Top Left: Warehouse distribution building with varied architectural elements, varied external finishes and ancillary offices located on the front façade of the building)**

**Figure 2: (Top Right: Factory / Warehouse distribution building with ancillary offices to the side of the building, providing strong vertical modulation and visual interest to the building)**



Figure 3: (Top Left: Two storey ancillary offices with strong vertical fin wall projections in front of a factory / warehouse building)



Figure 4: Top Right: Two storey ancillary offices on the front façade of a warehouse distribution building and vertical architectural elements along the building)



Figure 5: (Top Left: Factory / warehouse distribution building with horizontal colour banding on the building elevations with advertising signage matching the key vertical front façade element)



Figure 6: (Top Right: Warehouse distribution building with two-storey ancillary offices on the front facade)

## 5 ENERGY AND WATER EFFICIENCY

### 5.1.1 Objectives

- (a) Encourage development that achieves the principles of ecological sustainable development.
- (b) Ensure development incorporates passive solar design principles, energy and water efficiency and conservation and opportunities for natural ventilation.

### 5.1.2 Development Controls

1. The following energy efficiency measures are to be employed as a minimum as part of any development application.
  - (a) designing heating/cooling systems to target only those spaces which require heating or cooling, not the whole building.
  - (b) Reduce reliance on artificial lighting by incorporating natural light. This may include designing the development to provide direct daylight access to office spaces, providing skylights whenever possible and/ or sectioning lighting throughout the development to cater for current and future business needs.

- (c) appliances and products (e.g. fridges, computers, dishwashers) achieve a minimum 4 stars on the energy rating label.
- 2. The following water saving measures shall be incorporated in all industrial developments.
  - (a) A rainwater tank is to be installed onsite and sited to enable easy maintenance and cleaning. The rainwater tank is to be fitted with a first flush device and may be used for watering landscaped areas. Where possible, rainwater should supply toilets in the development.
  - (b) Water fixtures and appliances (dishwashers, shower heads, taps, toilets, urinals etc) are to be 3.5 stars or better rated.
  - (c) Select water efficient plants and/or, indigenous vegetation for use in landscaped areas.

Alternatives to the above water savings methods can be presented to Council and they will be assessed on merit.

## **6 SAFETY AND SECURITY**

### **6.1 Objectives**

- (a) To encourage appropriate natural surveillance and sightlines, in order to minimise potential crime risks within sites and the surrounding industrial areas.
- (b) To provide unimpeded sight lines, particularly along pedestrian pathways from public roads and car parking areas within the site.
- (c) To provide adequate lighting throughout the development site including lighting between building entrance points and car parking areas in accordance with Crime Prevention through Environmental Design (CPTED) principles.

### **6.2 Development Controls**

#### **6.2.1 Entrances and natural surveillance**

- 1. The front door to a building should face the road, wherever possible.
- 2. Any administration offices or showrooms must be located at the front of the building with windows facing the public road.
- 3. The street number of the building must be visible from the road to allow visitors and emergency service vehicles to easily identify the building.
- 4. Lighting (including bollard lighting) should be provided to the external entry path and the car parking area using vandal resistant light fixtures.
- 5. Lighting design should address the principles of Crime Prevention through Environmental Design (CPTED).
- 6. Compliance with the requirements of Chapter E2: Crime Prevention through Environmental Design (CPTED) in this DCP.



## 7 CARPARKING REQUIREMENTS

### 7.1 Objectives

- (a) To ensure adequate provision is made for on-site car parking for employee's and visitor's vehicles.
- (b) To encourage the provision of car parking areas that are integrated with the form and arrangement of buildings on-site.
- (c) To provide disabled car parking in accordance with the Access part of this DCP and the relevant Australian Standard.
- (d) To ensure car parking areas are attractive by requiring landscaping of all car parking areas.
- (e) To ensure opportunities for cycling to work are provided by encouraging the provision of bicycle parking areas and associated facilities within industrial developments.
- (f) To ensure car parking areas are integrated with the landscape design of the development site, in order to screen the car parking from the public road frontage as much as possible.

### 7.2 Development Controls

- 1. Car parking is to be provided in accordance with the requirements of the Car Parking, Access, Servicing / Loading Facilities and Traffic Management chapter in Part E of this DCP.
- 2. All car parking required by Council shall be provided 100% on-site.
- 3. The use of stacked car parking spaces is generally not permitted, except where the development is for a purpose built facility and the proponent can provide appropriate evidence that any stacked car parking spaces will be used only by employees and that appropriate documentary evidence is provided which outlines the management procedures that will be put in place by the specific organisation to guarantee the effective use of any stacked parking arrangement.
- 4. All developments shall provide a minimum of one (1) disabled car parking space which is clearly marked and located in close proximity to the main entrance to the building. For developments involving 50 or more car parking spaces, at least 2% or part thereof of these spaces shall be dedicated as disabled car parking spaces and located in close proximity to the main entrance to the building.
- 5. All car parking areas including access roadways shall be constructed of hard-standing, all weather-material with parking bays and manoeuvring areas clearly line marked.
- 6. The provision of bicycles is required in accordance with requirements of the Car Parking, Access, Servicing / Loading Facilities and Traffic Management chapter in Part E of this DCP and should be designed to encourage increased use of bicycles as a means of transportation to the workplace. The provision of bicycle storage facilities and showering / change rooms for staff is required to be shown on the architectural plans submitted with the Development Application.



Figure 7: Landscaping within car park providing shading for vehicles and visual relief of car parking areas.

## 8 LOADING DOCK FACILITIES, VEHICULAR ACCESS AND MANOEUVRING REQUIREMENTS

### 8.1 Objectives

- (a) To ensure that loading facilities required in association with factory or warehouse distribution centre developments do not detract from the amenity of adjoining land uses or public open space areas.
- (b) To ensure that adequate areas are set aside on the site to allow for the safe and efficient manoeuvring of delivery and service vehicles.
- (c) To ensure truck access and manoeuvring on site is safe and efficient and minimises any potential vehicular and / or pedestrian conflicts.
- (d) To ensure traffic circulation arrangements within the site are compatible with the local road system by implementing appropriate controls on the ingress and egress to / from sites.

### 8.2 Development Controls

1. Servicing and loading dock facilities shall be provided in accordance with the Car Parking, Access, Servicing / Loading Facilities and Traffic Management chapter in Part E of the DCP.
2. Each factory building / unit shall provide a suitable loading bay facility which is designed to accommodate a large rigid truck. However, buildings with a gross floor area of greater than 3,000 square metres shall provide loading dock facilities and manoeuvring areas capable of accommodating both semi-trailers and large rigid trucks.
3. Each factory / warehouse distribution centre unit shall be provided with a suitable loading bay external to the factory / warehouse building.
4. All loading and unloading activities shall take place wholly within the loading bay, at all times. No loading or unloading activity shall take place within any car parking area, landscaping area, pedestrian footway or any road reserve.
5. Loading docks shall be located so they are not visible from any adjoining residential area and do not transmit excessive noise onto any adjoining residential area.

6. Loading docks shall be positioned wherever possible, away from the public road frontage. Where such facilities can only be provided to the public frontage, appropriate landscaping will be required in front of the loading facility to adequately screen the development.
7. All loading dock facilities must guarantee satisfactory on-site manoeuvring areas for trucks in accordance with the Australian Standard AS 2890.2 Design Vehicular and Turning templates.  
  
Note: Council will assess the adequacy of proposed manoeuvring areas provided for on-site truck manoeuvring with reference to the standard vehicle turning templates as per the Australian Standard AS 2890.2 Design Vehicular and Turning templates.
8. All developments must be designed to ensure that the standard truck for each building / unit is able to complete a semi-circular turn on the site, in order to guarantee that all truck movements into / from the site are in a forward direction.
9. Truck turning circles shall not encroach upon any building, car parking space or landscaped area.
10. Access arrangements should be designed in accordance with the NSW Roads & Traffic Authority's Traffic Generating Guidelines and Australian Standard AS 2890.1 (2004). However, it is desirable that separate access arrangements be made available for standard passenger vehicles and trucks upon the development site, in order to minimise potential vehicular conflicts.
11. All internal two-way access roads shall have a minimum width of 7 metres. Lesser widths may be provided if the internal road system is designed to a single one-way circulation arrangement within the site including any loading dock facilities. Directional signage shall be shown on all internal roadways (where required) to facilitate the orderly movement of trucks and other vehicles within the site.
12. As per the provisions of C2.4 of the Building Code of Australia, emergency vehicular access must be provided from a public road. In this respect, the internal access road must have an unobstructed 6 metre width with no part of the building being more than 18 metres away from the access road. The minimum 6 metre wide access road shall be reserved for vehicular and pedestrian access only and not built upon or used for any other purpose.
13. All car parking areas, manoeuvring areas and internal roadways must be provided with a drainage system comprising surface inlet pits. Therefore, Council will require the lodgement of appropriate stormwater drainage layout plans and calculations for the proposed stormwater drainage system. The proposed stormwater drainage system must be designed in accordance with Council's requirements for stormwater drainage and on-site detention as per the Stormwater Management Chapter in Part E of this DCP.

## 9 LANDSCAPING REQUIREMENTS

### 9.1 Objectives

- (a) To use landscaping to improve the appearance of industrial developments.
- (b) To ensure that landscaping is provided to enhance the streetscape environment and amenity of industrial areas.
- (c) To screen unsightly land uses and outdoor storage areas.

## 9.2 Development Controls

1. Landscaping is required to be integrated with the overall development and should be used to improve the streetscape appearance of industrial development and associated car parking and loading areas.
2. A minimum 10% of the site area is required to be landscaped. The majority of such landscaping should be provided within the front property building line setback area and the side property boundaries.
3. Where an existing site has less than 10% landscaping for the total site area, Council will seek to achieve the provision of 10% landscaping on any unused portion of the land or within surplus car parking areas.
4. The provision of dense landscaping within the front property boundary to public roads is required in order to visually soften the bulk of large developments when viewed from the public road.
5. A minimum 5 metre set back from the front boundary is to be provided for landscaping along the full length of the property with frontage to an arterial or sub- arterial road. A 3 metre minimum deep dense landscaped area is required along the full length of the property frontage to a collector or local road. This area is to be a mulched planted area and must include trees planted at a minimum rate of one tree per 25m<sup>2</sup>.
6. Trees are to be planted at a rate of 1 tree per 10 car spaces. Tree species shall be selected to provide at least a 4 - 6 metre canopy spread at maturity. A minimum 1.5 metre wide landscape strip is required to be provided after every fifth parking space. Trees shall be a minimum 100 Litre size and shall be planted in minimum two (2) cubic metres of planting medium. Trees are to be protected by the use of such devices as bollards, kerbs and/or tree guards.
7. No structures, basement car parks, driveways, hard paving, are permitted within the landscaped setbacks.
8. Car parking areas which adjoin public roads or adjoining non – industrial land uses are to be visually screened by dense landscaping.
9. The planting of low shrubs to a maximum mature height of 1 metre is recommended along any pedestrian footpath area, in order to provide adequate pedestrian safety, particularly at night-time.
10. Parking and circulation areas are to be delineated by planter beds at the ends of parking bays.
11. Planter beds shall be a minimum width of 1.5 metres and shall be contained by a 150mm concrete kerb.
12. All car parking spaces shall contain concrete wheel stops.
13. Retaining wall heights are to be generally restricted up to a maximum height of 2.5m. Where walls exceed 2.5metres, the wall is to be terraced with a minimum 1.5m mulched planted area, which is to be planted with tall shrubs to provide adequate visual screening.
14. Pedestrian and vehicular movement is to be clearly separated by use of design devices such as change in paving, kerb, bollards, line marking. Pedestrian paths are to be minimum 1.5 metres in width.
15. Fencing forward of the front building alignment to be palisade type maximum height 1.8m. Gates where possible are to be sliding type gates, to prevent conflicts with access to and within the site.
16. An external shaded seating area for meal breaks is to be provided.

17. Contrasting paving is required at driveway thresholds. Large expanses of car parking are to be broken up by the use of contrasting paving.
18. Fire hydrants, electricity substations, sprinkler tanks and / or waste collection and storage facilities must not be located within the front landscaped area.
19. A fully automatic irrigation system is required in all car park planter beds. Tree root barriers should be installed around the edge of planter beds to reduce future maintenance.

### 9.2.1 Landscape Plan

1. The submission of a scaled and dimensioned Landscape Plan is required for all applications. This Landscape Plan must be prepared by a Landscape Architect or Designer with appropriate qualifications. A Landscape Architect is a person eligible for corporate membership of the Australian Institute of Landscape Architects. A Landscape Designer must be eligible for membership of the Australian Institute of Landscape Design and Management. The Landscape Plan, which is to be scaled at 1:100 or 1:200 must indicate:
  - (a) Existing site information, north point, site boundaries, dimensions, trees and vegetation, including trees on neighbouring properties that will be effected by the development.
  - (b) Proposed buildings/structures, underground/overhead services, easements, right-of-ways, roadways, car parks, footpaths.
  - (c) Location of external building structures i.e. Retaining walls including levels on the top and bottom of the walls, fences, materials, heights and finishes.
  - (d) Basic design levels to AHD of both hard and soft landscape areas including existing and proposed contours, spot heights, areas of cut and fill and finished levels.
  - (e) Proposed surface treatment of all landscape areas (eg paving, driveways, mulched planted areas, edging, turf, water).
  - (f) Each plant identified and catalogued in a plant schedule describing mature height and spread, quantity, proposed container size and staking. The plant schedule should be divided into trees, shrubs and ground covers.
  - (g) Construction or detail drawings, sections and elevations for outdoor structures, garden beds and planting, paving, edging, tree protection and retaining walls.
  - (h) Design details for special situations e.g. erosion, creek bank stabilisation.
  - (i) Location and details of lighting.
  - (j) Location of proposed drainage (both surface and sub-surface). The landscape and drainage plans must be compatible.
  - (k) Specification notes for soil preparation, plant material, tree protection etc.
  - (l) Details of minimum 12 months maintenance schedule.
  - (m) Provide taps or an irrigation system to ensure that all landscape works are adequately watered, the location of which is to be included on the landscape plan.
  - (n) Design measures to minimise crime risk including but not limited to: provision of external lighting to pathways, driveways and outdoor areas; shrubs higher than 1m to be setback from the edge of pathways; types of trees that have sufficiently high canopy when fully grown so that pedestrian vision is not impeded.

## 9.2.2 Arborist Report

1. An Arborist Report is required in relation to any significant tree on the subject site (other than an exempt tree) and trees on neighbouring properties that will be affected by the development, if it is 3 metres or more in height, or has a trunk diameter of 200mm or more at a height of 1 metre from the ground, or has a branch spread of 3 metres or more.
2. The Arborist Report is to be prepared by a qualified Arborist, which is a person who is eligible for membership as a 'Consulting Arborist' with the National Arborist Association of Australia or the Institute of Australian Consulting Arboriculturists, and who has attained a Level 5 Certificate of Horticulture / Arboriculture or equivalent. The report must identify trees on the site survey plan by number and provide details of the following:
  - (a) Genus and species of each tree;
  - (b) Health, amenity value and S.U.L.E. (Safe Useful Life Expectancy) rating of each tree;
  - (c) Impact of the development on each tree;
  - (d) Impact of retaining trees on the proposed development;
  - (e) The Tree Protection Zone (TPZ) required for each tree proposed to be retained;
  - (f) Any root barriers necessary, type and their location; and
  - (g) Any branch or root pruning which may be required for the trees.
3. The following table, from British Standard BS5837 (1991), is provided as a guide to developers of suitable development setbacks from existing trees.

**Table 3: Protection of trees: minimum distances for protective fencing around trees**

Tree age	Tree vigour	Trunk dia. Mm	Min. distance m
Young (age less than 1/3 life expectancy)	Normal	<200	2.0
		200 to 400	3.0
		>400	4.0
Young	Low	<20	3.0
		200 to 400	4.5
		>400	6.0
Middle age (1/3 to 2/3's life expectancy)	Normal	<250	3.0
		250 to 500	4.5
		>500	6.0
Middle age	Low	<250	5.0
		250 to 500	7.5
		>500	10.0

Tree age	Tree vigour	Trunk dia. Mm	Min. distance m
Mature	Normal	<350	4.0
		350 to 750	6.0
		>750	8.0
Mature and over mature	Low	<350	6.0
		350 to 750	9.0
		>750	12.0

**Note 1:** It should be emphasised that this table relates to distances from the centre of tree to protective fencing. Other considerations, particularly the need to provide adequate space around the tree including allowances for future growth and also working space around the tree will usually indicate that the structure should be further away.

**Note 2:** With appropriate precautions, temporary site works can occur within the protected area e.g. for access or scaffolding.

4. Trees proposed for industrial sites are to be suitable species that fulfil the following criteria: medium sized, hardy, long lived, pollution resistant, drought resistant, not prone to failing or dropping limbs. In addition trees must be true to type, of good health and vigour, free from pests and disease, free from injury, be self supporting (tree must not be tied to stakes) and meet the NATSPEC criteria. Refer to Table 4. for NATSPEC criteria. and Table 5. for the schedule of suitable species for industrial zones.
5. Site landscaping must be integrated with the stormwater management controls. In particular, the location and nature of on site stormwater detention basins should not conflict with landscaping areas and objectives.
6. Existing trees on site and on adjacent properties are to be surveyed and accurately plotted with levels and extent of canopy. This information is to be indicated on the Landscape Plan and clearly show whether the trees are to be retained or removed. If the proposed development impacts on significant trees an Arborist Report must be submitted that has been completed by a qualified Arborist.
7. The developer is to provide street trees to street frontages of the development site. Trees to be minimum container size 100L and must be true to type, of good health and vigour, free from pests and disease, free from injury, be self supporting (tree must not be tied to stakes) and meet the following NATSPEC criteria in Table 4:

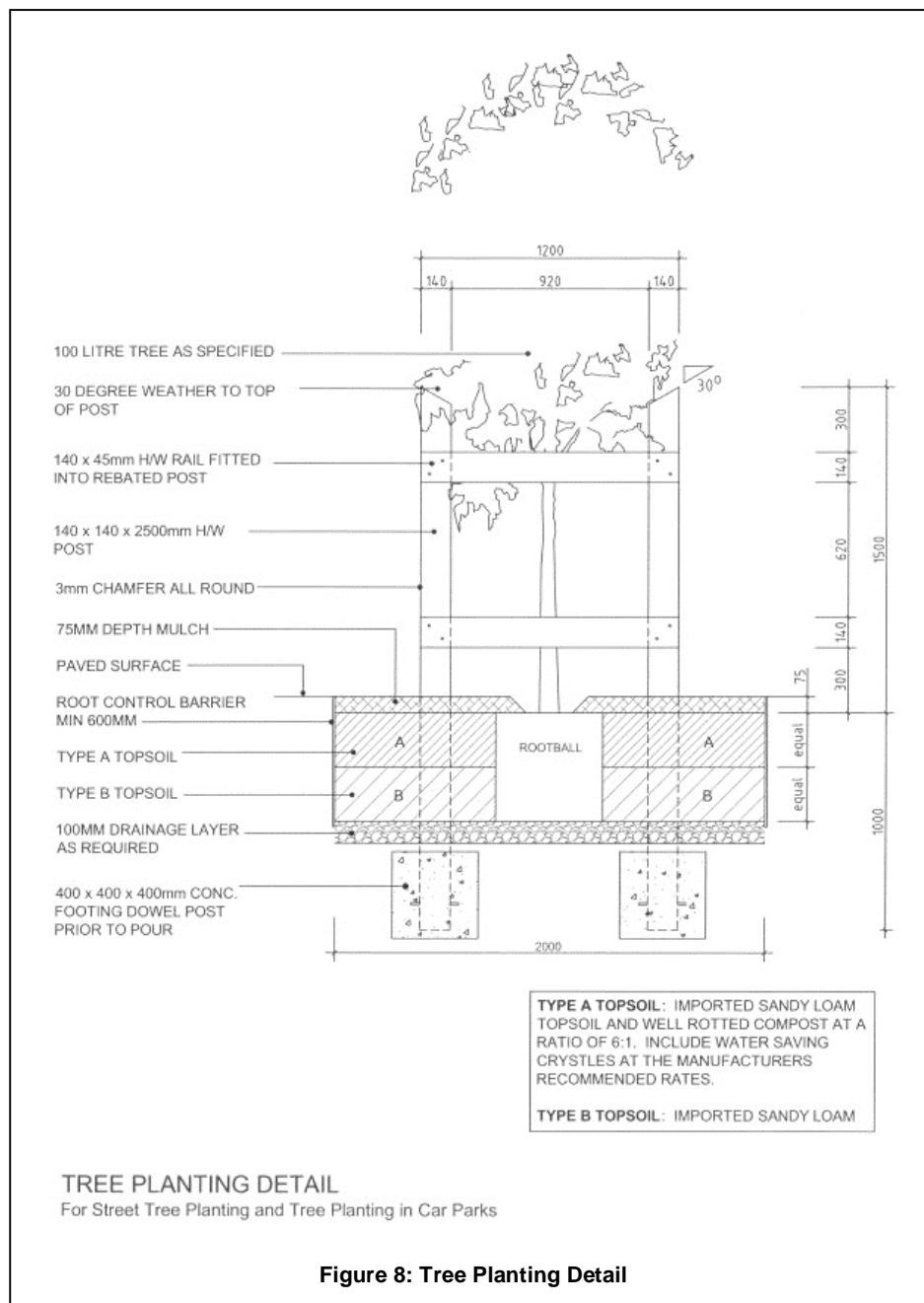
**Table 4: NATSPEC Criteria**

	Height (m)	Calliper (mm) 300mm above ground level	Minimum Rootball Diameter (mm)
Thin Stemmed 100L	3	40	500

Tree

Thick Stemmed 100L Tree	2.5	50	500
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- Street trees to be planted in mulched, edged areas minimum dimensions 1.2m x 1.2m, including root control barriers to back of kerb and to foot path alignment, and a robust timber tree guard to protect tree from damage, or as per conditions of consent.
- Suitable street trees for industrial areas in the Wollongong Local Government area can be obtained from Chapter E6 Landscaping in the DCP.





10. Trees must be planted and adequately established (minimum 12 months) to the satisfaction of WCC Manager of City Works.

## Definitions

**Landscape area** - Is any part of the site which is not occupied by any building, basement or hard surface such as driveways, parking areas or paved areas.

**S.U.L.E. – Safe Useful Life Expectancy** - The S.U.L.E. rating system, based on Barrell 2001, rates existing trees on their safe useful life expectancy, and are determined in view of both the current state of health and age of the tree.

**Tree** - Is a perennial plant with a self-supporting stem or trunk, when mature, and for the purpose of this DCP means any tree (other than an exempt tree) including the roots of that tree, if it is 3 metres or more in height, or has a trunk diameter of 200mm or more at a height of 1 metre from the ground, or has a branch spread of 3 metres or more.

**Tree Protection Zone** - The Tree Protection Zone (TPZ) defines the optimal distance from the trunk of a tree that should be maintained free of development and construction activity.

## 10 OUTDOOR STORAGE AREAS

### 10.1 Objectives

- (a) To ensure outdoor storage areas are appropriately accommodated on-site.
- (b) To minimise the visual impact of outdoor storage area on the streetscape of the locality.
- (c) To ensure open storage areas are properly screened to minimise any adverse visual effects of the development.

### 10.2 Development Controls

1. Where any storage area for raw materials or finished goods is proposed to be provided outside the confines of the building, full details of the storage area will require formal development consent.
2. All outdoor storage areas are to be positioned at the rear or side of buildings with no storage areas being permitted within the front setback area of either the primary street frontage or any secondary street frontage.
3. Outdoor storage areas shall be adequately screened from public view by a minimum 2 metre high masonry fence.
4. The maximum height of goods and materials stored within the storage area shall be restricted to no more than the height of the screening structure. However, Council may permit a variation from this requirement where Council is of the opinion, that: (i) the location and overall height of the goods and materials will not pose any adverse overshadowing, amenity or visual impact upon any adjoining sensitive land use such as residential development or (ii) the siting and overall height of the goods and materials will not pose any adverse amenity impact upon the public domain or upon streetscape in the immediate locality.

## 11 SHIPPING CONTAINER STORAGE FACILITIES

### 11.1 Objectives

- (a) To ensure that the storage of shipping containers does not cause any adverse visual impact upon the streetscape or amenity of the surrounding locality.
- (b) To ensure the storage of shipping containers is restricted to specific designated storage areas only within a site and that the storage areas are well screened from view from any road frontage or any abutting or nearby residential area.
- (c) To ensure all semi-trailer trucks and trailers carrying shipping containers are contained wholly within the confines of the subject site and not on any public road.

### 11.2 Development Controls

- 1. The storage of shipping containers shall take place within a designated storage area behind the front building line setback. The storage of shipping containers within the front setback area of a development is not permitted.
- 2. All shipping container storage areas shall be screened from view from any road frontage and from any adjoining residential area by landscaping or other form of screening to the satisfaction of Council.
- 3. All storage areas for shipping containers shall provide sufficient on-site truck manoeuvring areas, in order to ensure all trucks can enter and leave the site in a forward direction.
- 4. All shipping container storage areas shall be separate from truck manoeuvring / parking areas and employee car parking areas.
- 5. All trailers used for the carrying of shipping containers to / from the site (whether with or without prime movers) shall be prohibited from standing on any public road.
- 6. The stacking of shipping containers may be acceptable where it can be demonstrated that the overall height of the stacked shipping containers will not result in any adverse visual or amenity impact upon any adjoining land use. However, the stacking of shipping containers on sites adjoining residential areas will not be supported, except where such containers are situated a minimum distance of 20 metres from the common property boundary with the residential area and any such stacking of containers does not pose any adverse overshadowing, amenity or visual impact upon the adjoining residential property(s).
- 7. Any refrigerated shipping containers shall be located within a central part of the site, if the site abuts a residential area or is adjacent to a dwelling not associated with the development in which the refrigerated shipping container is stored.
- 8. Any weighbridge or control device shall be sited at least 30 metres from the site entrance, in order to prevent any queuing of container freight trucks on any public road.
- 9. All trucks carrying shipping containers shall travel along specified roads, at all times. Documentary evidence will be required to be provided in support of any Development Application outlining the proposed routes to / from the subject site.

## 12 MOTOR VEHICLE REPAIR WORKSHOPS

### 12.1 Objectives

- (a) To ensure that motor vehicle repair workshops provide satisfactory vehicle storage areas and parking facilities on-site; and
- (b) To minimise any environmental problems through the emission of odours, noise, material storage, overspray and liquid spillage.

### 12.2 Development Controls

1. All vehicles awaiting servicing, repair and / or collection are to be stored on approved parking bays only and are prohibited from standing or being stored on any designated visitor parking area, public open space area or the public road carriageway or footpath.
2. All work shall be confined wholly within the building. No work is to be carried out on motor vehicles in any car parking area or any public road.
3. Where spray painting is proposed, spray painting booths shall be provided to the requirements of Australian Standard AS 4114.
4. Spray painting shall be exhaust ventilated so that no odour is noticeable in any adjoining residential area.
5. A Trade Waste agreement is to be obtained from Sydney Water prior to the commencement of works for any waste water generated and to be discharged into Sydney Water's wastewater system.
6. Storage bins for scrap body panels and motor parts are to be provided. These bins are to be fully screened from any public road frontage and car parking area and must be emptied on a regular basis. The proposed location of storage bins shall be shown on the site plan accompanying a Development Application.
7. The car parking requirements for a motor vehicle repair operation shall be commensurate with the car parking requirements contained in this part of the DCP.
8. All vehicles including tow trucks are to enter and leave the site in a forward direction, at all times.

## 13 FENCING

### 13.1 Objectives

- (a) To ensure that fencing does not detract from the overall streetscape and visual amenity of the surrounding locality.
- (b) To provide appropriate security for the development and any outdoor storage areas.

### 13.2 Development Controls

1. All fencing in industrial developments shall be constructed of palisade or decorative open style metal type fencing with a maximum 2.4 metre height.

2. The use of sheet metal fencing or chain wire fencing on the front property boundary is not permitted.
3. In cases where residential land uses abut the common side or rear property boundary, timber paling, colorbond or decorative masonry fencing may be permitted in order to provide appropriate visual relief to the residential property. A maximum 2.2 metre fence height (ie at any point) will be permitted along the common property boundary between an industrial site and an abutting residential property.
4. All front entry gates shall be constructed to swing inwards into the site or slide across the frontage, at all times.
5. Masonry retaining walls along the street frontage shall be restricted to 600mm in height. Palisade or other decorative open metal type fencing may be erected on top of the masonry wall provided the total height of the masonry wall and fence is a maximum 2.4 metres in height.



**Figure 9: Palisade fencing**

## **14 USE OF FACTORY / WAREHOUSE UNITS**

### **14.1 Objective**

- (a) To ensure that appropriate assessment is made upfront to ensure the proposed fit-out and use of the relevant factory unit or warehouse unit takes into account relevant fire safety and Building Code of Australia (BCA) requirements.

### **14.2 Development Control**

1. Under certain circumstances, separate development consent may be required for the initial occupancy or change of use of a factory unit or warehouse unit. Applicants are recommended to contact the Duty Building Surveyor in the Customer Service Centre, to provide advice as to whether formal development consent is required for their intended use and / or whether an upgrading of the building is likely to be necessary to ensure BCA and fire safety compliance.

## **15 ABRASIVE BLASTING INDUSTRY**

### **15.1 General**

1. Abrasive blasting is used in a wide range of industries for many different purposes including the removal of rust, scale, paint, graffiti, mildew, and various forms of surface preparation. Abrasive

material is propelled on to the surface at high speed, using air pressure, water pressure, or centrifugal force.

2. The most common method of abrasive blasting uses compressed air to propel abrasive material from a blast pot, through a blasting hose to a nozzle that is manually controlled by the operator. Blasting is done in commercially built blast rooms, blasting yards, or inside temporary enclosures erected on-site. Other methods use wet abrasive blasting or water jetting with or without an abrasive. Automated abrasive blasting machines such as centrifugal wheel systems and tumblers are also occasionally used.

## 15.2 Objectives

- (a) To encourage abrasive blasting within fully enclosed booths with venting to the atmosphere via an appropriate dust collector filter, wherever possible.
- (b) To ensure all waste material collected from the site must be either gathered for reconstitution or disposed of at a site approved by the DECCW.
- (c) To ensure wet abrasive blasting activities are carried out at least 30 metres distance away from any other adjoining land use activity.

## 15.3 Development Controls

### 15.3.1 Abrasive Blasting Booth

1. Where possible all abrasive blast cleaning should be carried out in a totally enclosed booth vented to the atmosphere via a dust collector, preferably a fabric filter.
2. For an abrasive blast cleaning booth the following criteria should be complied with:-
  - (a) The fabric filter or dust collector should be properly designed and maintained. The Department of Environment, Climate Change and Water (DECCW) advises that the appropriate air to cloth ratio is 0.01 to 0.03 metres per second. However, different types of filters are available having variable air to cloth ratios. The most efficient filter for the particular application should be the goal.
  - (b) All particulate wastes generated by the blast cleaning should be removed from the booth and either re-used or transported from the site without causing any visible emissions;
  - (c) Spent filters should be bagged or contained before disposal;
  - (d) The condition of the fabric filters should be monitored by assessing emission levels so that they are replaced before their efficiency is reduced.
  - (e) The booth should be designed to enable continuous or frequent recovery of spent abrasive agent.
  - (f) Immediate action should be taken to rectify any problems causing any visible emissions from the abrasive blast cleaning work area or associated operations;
  - (g) The residual concentration limits of particulate material in the air discharged to atmosphere from the booth after passing through the filter should not exceed 150 milligrams per cubic metre.

Note:- An emission level for particulate material has been proposed for the National Guidelines which is 100 milligrams per cubic metre using Best Practicable Technology (BPT).

3. All waste material collected from the site must be either gathered for reconstitution or disposed of at a site approved by the DECCW. (Whytes Gully Waste Disposal Depot has been approved for this purpose subject to the waste being properly contained and placed at the disposal site in a manner that controls dust emissions).

### 15.3.2 Metal Plate and Sections Abrasive Blasting

1. Commercial units for the abrasive blast cleaning of metal plate or other solid sections are available with a plate or section cleaning machine. The cleaning machine should discharge to the atmosphere via a suitable fabric filter dust collector.

### 15.3.3 Wet Abrasive Cleaning

1. When it is impracticable to use a suction system, wet abrasive cleaning can be carried out provided that:-
  - (a) A buffer distance of 30 metres or twice the height of the work platform, whichever is the greater, exists around the blast cleaning operation. A buffer distance of less than the above may be permitted if effective screens are used to prevent particulate emissions escaping from the site.
  - (b) The blasting agent is thoroughly wetted to prevent a visible emission;
  - (c) The waste material is removed before it is able to dry out and become airborne or can be washed away causing sedimentation in drains and watercourses or harm to the environment.
  - (d) Special collection and treatment facilities will be required to be designed for wastes such as sodium chromate, sodium dichromate, potassium dichromate, sodium nitrate, chromic acid, hydrochloric acid or sodium bicarbonate solids.
  - (e) All waste material must be disposed to an appropriate disposal site approved by the DECC. (Whytes Gully Waste Disposal Depot has been approved for this purpose subject to the waste being properly contained and placed at the disposal site in a manner that controls dust emissions).

### 15.3.4 Outdoors Blast Cleaning

1. Outdoors blast cleaning operations should only be conducted where it is impractical to clean items in a booth or with a plate or section cleaning machine, e.g. items which are too large or too heavy to fit into a booth or which are existing fixed structures. In such cases all plant and equipment associated with the outdoor blasting operation should be located within a regulated area on site and appropriately sign posted.
2. Outdoors blast cleaning should preferably be carried out using a blasting gun or an airless applicator which extracts excess blasting agent together with any dust generated.
3. All outdoor blasting involving structures such as bridges or buildings should be totally enclosed or sections enclosed progressively such that no visible emissions escape to the environment. The air supply for the operator should be supplied via a hose from outside the enclosure and all waste material should be collected and disposed of appropriately. No waste material should be allowed to fall into rivers, creeks or storm water drains.
4. If the material being removed during blast cleaning contains toxic concentrations of substances such as lead, arsenic, chromium, etc., then advice should be sought about collection and disposal of the contaminated abrasive. If there is an inability to confirm that the material does not contain these substances, the material should be considered toxic and compliance with AS 1361.1-1995 is necessary.

### 15.3.5 Surface Run-off Control

1. Pollution control devices should be provided on the site to control surface run-off whenever abrasive blasting operations are carried out external to an abrasive blasting booth.
2. The control may include site bunding that surrounds the area where particulate fallout is likely to occur. This bund should be graded towards a point that is directly attached to a pollution control pit/sedimentation pond.
3. This pollution control pit requires regular monitoring and regular maintenance to remove accumulated sludge.
4. All sludge must be disposed of at an appropriate disposal site approved by the DECCW.

## 16 INDUSTRIAL DEVELOPMENT ADJOINING A RESIDENTIAL ZONE

### 16.1 Objectives

- (a) To ensure any new industrial development is sympathetic with the streetscape character and amenity of an adjoining residential precinct.
- (b) To ameliorate any potential adverse amenity, noise, privacy or overshadowing impacts upon any adjoining or neighbouring residential development from any proposed new industrial building or proposed alterations and additions to an existing industrial building.

### 16.2 Development Controls

1. Where a new factory / warehouse distribution building abuts a residential zone, the front building line setback shall be in accordance with the minimum front setback requirements as listed in Table 1 of clause 3.1.2 in this chapter or the front building line setback of the adjoining residential development, whichever is the greater.
2. As per sub-clause 3.1.2(6), a minimum 3 metre side or rear building line setback is required for any industrial building abutting a residential zone. The setback distance for an industrial building shall be further increased by an additional one (1) metre for every additional metre, above 5 metres in building height. The setback area between the building and the common property boundary is to be densely planted with evergreen trees and shrubs which, at maturity, help screen the development from the adjoining residential precinct. The details of the proposed trees and shrub planting shall be reflected on the required Landscaping Plan and must be consistent with the Landscaping Chapter in Part E of this DCP.
3. The submission of shadow diagrams for hourly intervals between 9.00 am and 3.00 pm for the 21<sup>st</sup> June winter solstice period will be required for any new industrial building or alterations and additions to an existing industrial building abutting a residential zone or a dwelling not associated with the subject site which prove that at least all habitable living room windows in an adjoining dwelling and at least 50% of the rear private courtyard area of an adjoining residential property receive at least 3 hours of direct sunlight between 9.00 am and 3.00 pm on the 21<sup>st</sup> June winter solstice period.
4. Sources of noise such as garbage collection, deliveries, plant and machinery, parking areas and air conditioning plants should be sited away from adjoining residential properties, wherever practicable or where necessary, screened by walls or other acoustical treatment.
5. Loading/ unloading areas should be located so they are not visible from any adjoining residential area and do not transmit any excessive noise onto any abutting residential development. The

submission of a noise impact assessment report may be required with the Development Application where loading / unloading facilities are proposed to be positioned in proximity to any adjoining noise sensitive land use such as residential dwellings and educational establishments.

6. Noise emissions from the operation of an industrial premises must not exceed an LA10, <sup>T(15 minute)</sup> noise emissions criteria of 45dB(A) during the day (7.00 am and 6.00 pm), when measured at the common boundary property boundary with the nearest residential property.

**Note**

LA10 <sup>T(15 minute)</sup> is the sound pressure level that is exceeded for 10% of the time when measured over a 15 minute period.

For the purpose of noise measures required the LA10 noise level must be measured or computed at any point described above over a period of 15 minutes using “FAST” response on the sound level meter.

For the purpose of the noise criteria for this section, 5dB(A) must be added to the measured level if the noise is substantially tonal or impulsive in character. The location or point of impact can be different for each development, for example, at the closest residential receiver or at the closest boundary of the development.

The noise emission limits identified apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:

- (a) Documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions;
  - (b) Where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversion conditions should be developed and implemented.
7. The hours of operation for any industrial development adjoining a residential zone will generally be restricted to between 7.00 am and 6.00 pm Mondays to Fridays and 7.00 am to 1.00 pm Saturdays with no activities or work permitted on Sundays and / or Public Holidays.
  8. Council may consider a variation to the general hours of operation referred to in sub-clause 6 where a Development Application is supported by a Noise Impact Assessment report. The report shall be prepared by a suitably qualified and experienced consultant who is a member of the Australian Acoustical Society (AAS) or the Australian Association of Acoustical Consultants (AAAC). The report should identify all potential noise sources / activities including plant and equipment, garbage collection, loading / unloading deliveries etc.

For Council to consider any variation to the standard hours of the operation, the report must prove that the LA10 <sup>T(15 minute)</sup> maximum average noise emission level for the development (inclusive of all potential noise generating sources / activities) will be no more than 5dB(A) above the LA90 background noise emission level throughout the evening and night-time periods, when measured at the common property boundary with the nearest residential property.

## 17 RETAILING IN INDUSTRIAL AREAS

### 17.1 Neighbourhood Shops

#### 17.1.1 Objectives

- (a) To encourage small neighbourhood shops which provide for the daily convenience needs of people who live or work in the surrounding industrial estate.



- (b) To limit the location, number and size of small neighbourhood shops within an industrial estate to maintain the role and character of the industrial area by primarily catering for industrial development and to maintain the viability of any existing or approved neighbourhood shop in the industrial area.

### 17.1.2 Development Controls

1. Any proposed neighbourhood shop must be limited to the retail sale of small daily convenience goods such as foodstuffs, drinks, personal care products, newspapers and the like which provide for the daily needs of people who live or work in the local industrial estate.
2. A neighbourhood shop must be restricted to a maximum gross floor area (GFA) of 100m<sup>2</sup>, to ensure that the shop primarily caters for the daily convenience needs of people who live or work in the subject local industrial estate and to ensure that the development does not cause any potential significant adverse effect upon the viability of a nearby business zone identified as per Council's adopted retail hierarchy strategy in Chapter B4 in this DCP.
3. A minimum 400 metre straight line separation distance is required between a proposed neighbourhood shop and any existing or approved neighbourhood shop or any neighbouring business zoned land.

## 17.2 Take –away food and drink premises

### 17.2.1 Objectives

- (a) To encourage small take away food and drink premises which primarily provide for the sale of food and / or drinks for immediate consumption away from the premises by people who live or work in the surrounding industrial estate.
- (b) To limit the location, number and size of take away food and drink premises within an industrial estate to maintain the role and character of the industrial area by primarily catering for industrial development and to maintain the viability of an existing or approved take away food and drink premises or kiosk in the industrial area or within a nearby business zone.

### 17.2.2 Development Controls

1. Any proposed take away food and drink premises shall primarily provide for the retail sale of food and / or drinks for the immediate consumption away from the premises.
2. Any take away food and drink premises within an industrial area shall be restricted to a maximum gross floor area of 100m<sup>2</sup>.
3. A minimum 400 metre straight line separation distance is required between a proposed take away food and drink premises and any existing or approved take away food and drink premises or any neighbouring business zoned land.

## 17.3 Kiosks

### 17.3.1 Objectives

- (a) To encourage the establishment of kiosks which provide for the retail sale of food, light refreshments and other small convenience items to meet the daily convenience needs of people who live or work in a local industrial area.
- (b) To limit the location, number and size of kiosks within an industrial estate to maintain the role and character of the industrial area by primarily catering for industrial development and to maintain the viability of an existing or approved kiosk or takeaway food and drink premises.

### 17.3.2 Development Controls

1. Any kiosk shall be restricted to the retail sale of food, light refreshments and other small daily convenience items such as newspapers and the like.
2. Any kiosk shall be restricted to a maximum gross floor area (GFA) of 30m<sup>2</sup>.
3. A minimum 400 metre straight line separation distance is required between a proposed kiosk and any existing or approved kiosk or takeaway food and drink premises or any nearby business zoned land.

## 18 YALLAH INDUSTRIAL ESTATE

### 18.1 Development Controls

#### 18.1.1 Building height

1. The Yallah Industrial Estate is within the flight path of the Illawarra Regional Airport. Therefore, no development is permitted to penetrate the Obstacle Limitation Surfaces for the Illawarra Regional Airport. Further information regarding the specific height restriction for development upon land within the Yallah Industrial estate should be obtained from Council.

#### 18.1.2 Floodlighting restrictions within flight path

1. Given that the majority of lands within the Yallah Industrial Estate are within the flight path of the Illawarra Regional Airport, the provision of floodlighting to industrial premises within the Yallah Industrial Estate is not permitted.

#### 18.1.3 Use of non-reflective building materials

1. Since the majority of lands within the Yallah Industrial Estate are within the flight path of the Illawarra Regional Airport, all building materials must be of a low-reflective finish. All external building materials / finishes must have a low level of reflectivity and hence, zincalume external materials and finishes will not be permitted.
2. The glass reflectivity of any building shall not exceed 20%.
3. The submission of a schedule of proposed external materials and finishes board and A4 sized colour photograph of the schedule of proposed external materials and finishes board is required to be submitted with any Development Application.

## 19 JARDINE STREET INDUSTRIAL ESTATE

### 19.1 Development Controls

1. Any proposed building on a lot adjoining residential properties shall be setback a distance equal to the height of the building, in order to avoid any potential overlooking or overshadowing problems. An absolute 3 metre minimum setback distance is required for the provision of a dense landscaping buffer screen and / or drainage purposes.
2. The provision of two (2) street trees per development site will be required to be planted within Council's footpath. The street trees shall be either:
  - (i) *Syzygium paniculatum* (where there are no electricity wires);

- (ii) *Acmena smithii var minor* (where there are electricity wires); or
- (iii) Native trees as listed in the Landscaping Section of this DCP and endorsed by Council's Infrastructure Division (Design & Technical Services Section).

Accordingly, applicants may wish to liaise with Council's Infrastructure Division (Design & Technical Services Section) to determine what street tree species should be planted within the footpath area.

## **20 ADVERTISING STRUCTURES / SIGNS**

### **20.1 Development Controls**

1. All advertising signage or structures for industrial developments shall be in accordance with the requirements of State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64) and Chapter C1 Advertising Signage and Structures of this DCP.

## **21 STORMWATER DRAINAGE REQUIREMENTS & FLOOD STUDY REQUIREMENTS**

### **21.1 Objectives**

- (a) To provide for the effective and efficient disposal of stormwater run-off.
- (b) To minimise stormwater run-off from development sites, wherever possible.
- (c) To improve water quality of stormwater run-off from all industrial developments.
- (d) To ensure Water Sensitive Urban Design (WSUD) measures are incorporated into the design and construction of industrial developments.
- (e) To encourage the re-use and recycling of stormwater run-off and reduce the reliance on potable water by incorporating WSUD principles.
- (f) To ensure appropriate flood impact assessment is undertaken for sites subject to flood inundation.

### **21.2 Development Controls**

#### **21.2.1 Stormwater drainage & stormwater quality controls**

1. Water sensitive urban design treatment measures should be incorporated into the following developments:
  - (a) Industrial developments (including major alterations and additions to existing industrial buildings) involving a gross floor area of 4,000 square metres;
  - (b) Industrial subdivisions involving 5 or more proposed allotments or a site area of 4,000 square metres or more (whichever is the lesser);
  - (c) Warehouse distribution centre developments involving a gross floor area of 5,000 square metres or more.

2. Water sensitive urban design treatment measures shall be designed in accordance with the Water Sensitive Urban Design chapter in Part E of the DCP.
3. Stormwater including overland flows entering and discharging from the site must be satisfactorily managed. The site drainage network must provide the capacity to safely convey stormwater run-off resulting from design storm events.
4. All developments must provide for stormwater drainage and on-site detention in accordance with the requirements of Stormwater Management chapter in Part E of this DCP.
5. For sites which slope downwards away from the public road, the submission of documentary evidence is required from all relevant downstream property owners, which confirms that each property owner raises no objection to the discharge of stormwater by way of drainage pipelines through their properties to connect up with Council's stormwater drainage system. This documentary evidence must also confirm that each property owner has no objection to the creation of an easement covering the width of the drainage pipeline(s) on their respective property title(s).

### **21.2.2 Flood impact assessment**

1. Any development upon a site which is identified as "flood hazard – affected" on Council's Property system must also comply with the requirements of the Floodplain Management Chapter in Part E of the DCP and the NSW State Government's Floodplain Development Manual. In this respect, a flood study is likely to be required to be prepared and hence, applicants should consult with Council's Infrastructure Division to determine whether a flood study is required and the necessary content of any such study

## **22 RIPARIAN CORRIDOR MANAGEMENT**

### **22.1 Development Controls**

1. Any proposed industrial subdivision or factory / warehouse development involving waterfront land on, in or within 40 metres of any bed of a river, creek or intermittent watercourse, lake or estuary must comply with the requirements of Chapter E23 Riparian Corridor Management in this DCP.

## **23 UTILITY INFRASTRUCTURE SERVICES**

### **23.1 Development Controls**

1. Satisfactory arrangements are required for:
  - (a) The provision of reticulated water and sewerage;
  - (b) The provision of underground electricity; and
  - (c) The provision of underground telecommunications.
2. Applicants are encouraged to consult with Sydney Water, in order to ensure that all industrial allotments can be satisfactorily serviced with reticulated water and sewerage.

Additionally, applicants should liaise with Sydney Water to determine what water pressure will be available in the reticulated water supply system. In the event that a sprinkler tank is required to be provided by the applicant / developer the water pressure from a sprinkler tank shall be in accordance with the Australian Standard AS 2118.1 – 1999 – Automatic Fire Sprinkler Systems.

Any sprinkler tank will be required to be positioned behind the front building line and not within any landscaped area.

3. Applicants are also recommended to liaise with Integral Energy or another electricity provider prior to the lodgement of the Development Application, in order to ascertain the exact requirements for the provision of electricity supplies to the development. As part of this consultation, the applicant will be required to ascertain whether an electricity sub-station is required. In the event that an electricity sub-station is required, the sub-station must be located behind the front building line of the building and not within any landscaping area.
4. Applicants should also liaise with a telecommunications carrier to ascertain the requirements for the provision of telecommunications to the site.

Any consent issued for the industrial land subdivision will require the submission of documentary evidence that satisfactory arrangements have been made with Sydney Water, the electricity provider and the telecommunications provider to service each lot in the subdivision.

## 24 SUBDIVISION OF INDUSTRIAL LAND

### 24.1 Development Controls

#### 24.1.1 Minimum Lot Size & Width Requirements

1. The minimum subdivision lot size requirement for lands within the IN1 General Industrial, IN2 Light Industrial and IN3 Heavy Industrial zones shall be in accordance with the relevant Lot Size map as controlled in Wollongong Local Environmental Plan 2009.
2. The minimum lot width requirement for lands zoned either IN1 General Industrial, IN2 Light Industrial and IN3 Heavy Industrial zones shall be in accordance with the Table below.

**Table 6 Minimum Lot Width Requirements**

Industrial Zone	Minimum Lot Width Requirement
IN1 General Industrial Zone	50 metres
IN2 Light Industrial Zone	30 metres
IN3 Heavy Industrial Zone	100 metres

3. Battle-axe shaped allotments shall comply with the minimum lot width requirements at the building line as referred to in the Table above. For the purposes of this clause, the building line for battle-axe shaped allotments is 10 metres from the battle-axe handle.
4. Where battle-axe shaped lots are proposed, the access handle must be a minimum width of 8 metres for the servicing of up to two(2) allotments.
5. A maximum of two (2) battle-axe allotments are permitted to share a common battle-axe handle. Where two(2) battle-axed shaped lots share a common battle-axe handle, the creation of reciprocal rights of carriageway benefiting and burdening each of the affected allotments will be required as part of the subdivision.
6. All battle-axed shaped allotments shall provide fire hydrant servicing in accordance with the requirements of the New South Wales Fire Brigade, New South Wales Rural Fire Service and any relevant Australian Standard.

7. Corner allotments are to be provided with a 3 metre x 3 metre splay corner.

## 25 ROAD DESIGN & CONSTRUCTION REQUIREMENTS - ROAD TYPES AND CHARACTERISTICS FOR PUBLIC ROADS

1. The design of any road as part of a subdivision shall be in accordance with the following Table 7 for each specific road type.

**Table 7: Road Type Characteristics & Construction Requirements**

ROAD TYPE	MAXIMUM TRAFFIC VOLUME	DESIGN SPEED (Km/hr)	MINIMUM ROAD CARRIAGEWAY WIDTH (m)	MINIMUM VERGE WIDTH EACH SIDE (m)	MINIMUM TOTAL ROAD RESERVE WIDTH(m)
<b>Arterial Roads*</b>	>10,000 vehicles / day	80	Min.18.5m (including 4m wide central median)*	Min.4.25m with upright kerbing*	Min.27m*
<b>Sub-Arterial / Major Collector Roads*</b>	>5,000 up to 10,000 vehicles per day	60 / 70	Min.16m (including 4m wide central median)*	4.25m with upright kerbing*	Min.24.5m*
<b>Other Industrial Roads</b>	Up to 5,000 vehicles / day	50 /60	Min.12m	4m with upright kerbing	Min. 20 m
<b>Cul-de-sacs</b>	Up to 2,000 vehicles	50	Min. 12m	4m with upright kerbing	Min.20m Min. 28m diameter turning head

### Additional Requirements:

- (1) The design and construction for each road type as indicated in the Table above shall also be in accordance with the design requirements contained in Wollongong City Council's "Wollongong Subdivision Code" dated 24 February 2003. Also refer to Council's Subdivision Code for general subdivision design and the construction requirements for roads, stormwater drainage, utility services etc.
- (2) Road carriageways must be widened at bends to allow for wider vehicular travel paths (Austroads Turning Templates)
- (3) The road design should be compatible with the existing road pattern in the locality.
- (4) The minimum spacing of staggered intersections in a local road network should be 20 metres.
- (5) Any subdivision proposal adjoining a rear lane shall be designed so as to provide both vehicular and pedestrian access to the front road.

- (\*) Early upfront consultation is recommended with both the NSW Roads & Traffic Authority and Council's Infrastructure Division, in order to determine the exact total road reserve and road carriageway width requirements for arterial and sub-arterial roads.
2. A deceleration lane may also be required for development sites fronting a main arterial or sub-arterial road. This requirement may in certain cases, be based upon advice received from the NSW Roads & Traffic Authority in accordance with provisions of SEPP (Infrastructure) 2007 relating to traffic generating development and / or Council's own traffic generation impact and access arrangement assessments of the proposed development.
- Accordingly, applicants are recommended to discuss any proposal for industrial development on an arterial road or sub-arterial road with Council's Infrastructure Division (Traffic & Transport Section) for appropriate advice as to whether a deceleration lane may be required for a particular development.
3. Notwithstanding Table 7, Council may permit the provision of car parking areas within the front building line setback area provided to a minimum 5 metre deep dense landscaped area being provided along the front property boundary line for properties abutting an arterial or sub-arterial road, or a minimum 3 metre deep dense landscaped area being provided from the front property boundary line for properties abutting a collector or local road.
4. Portico or special entrance features which are integrated into the building and which provide visual interest, may encroach into the front setback by a maximum of 2 metres.
5. Side and rear setbacks may be required depending upon the nature of adjoining development and whether the subject site is adjacent to a stormwater drainage system or additional setbacks are required for the provision of satisfactory fire truck access as per the Building Code of Australia and / or the specific requirements of the NSW Fire Brigades including the NSW Fire Brigades Code of Practice – Building Construction – NSWFB Vehicle Requirements. Therefore, applicants are encouraged to discuss this aspect with Council staff, prior to the lodgement of the Development Application.
6. A minimum 3 metre side or rear building line setback is required for any industrial building abutting a residential zone. The setback distance for an industrial building shall be further increased by an additional one (1) metre for every additional one (1) metre, above 5 metres in the building height. The setback area between the building and the common property boundary is to be appropriately planted with suitable evergreen trees and shrubs which, at maturity, help screen the development from the adjoining residential development. The details of the proposed trees and shrub planting shall be reflected on the required Landscaping Plan and must be consistent with the Landscaping Chapter in Part E of this DCP.

## 25.1 Road infrastructure construction works

1. Where a subdivision of land fronts an existing public road in poor condition the developer will be required to provide and / or reconstruct kerb and gutter or fully construct the road structure and pavement for the full length of the existing road frontage at full cost to the applicant as per the requirements of Council's Subdivision Code.

## 26 RESTRICTED ACCESS TO ARTERIAL OR SUB-ARTERIAL ROADS

### 26.1 General

1. Direct access to any arterial or sub-arterial road will not be permitted where alternate public road access is available. However, direct property access to / from an arterial or sub-arterial road will not be restricted until such time as alternate public road access is available.

## 26.2 Creation of legal restrictions prohibiting direct access to designated roads (arterial or sub-arterial roads)

1. Council may require as a condition of consent as part of any subdivision or development that a suitable restriction on the use of land be created pursuant to the provisions of Section 88B of the Conveyancing Act 1919, in order to legally prohibit direct access to / from any adjoining Arterial or Sub-Arterial Road where alternative direct public road access is available to / from the subject site.

## 26.3 Temporary access to designated roads (arterial or sub-arterial roads)

1. Temporary access may be granted to a designated road (arterial or sub-arterial road) where alternate public access has not yet been completed. However, this temporary access arrangement will be dependent upon the nature of the access arrangement in relation to the arterial or sub-arterial road. Additionally, the formal concurrence of the NSW Roads & Traffic Authority may be required.

## 27 STREET LIGHTING

1. Electric street lighting systems are to be provided for roads and intersections as well as pedestrian crossing and traffic calming device locations in accordance with AS / NZS 1158 Road Lighting as indicated in the following Table 8.

**Table 8: Road Type - Street Lighting Requirements**

Road Type	Street Lighting Category (AS 1158)
Arterial Roads	V4
Connector Road (>7000 vehicles / day)	P3
Connector Road (<7000 vehicles / day)	P4
Access Road in Business Areas	P3
Access Road	P4
Laneway	P5
Public Pathways & Cycleways	P4
Car parks	P11
Traffic Calming Device (including roundabout)	Horizontal illuminance min. of 3.5 lux
Pedestrian Refuge	Horizontal illuminance min. of 3.5 lux

Note: Category of illumination is defined in AS 1158 Part 1.1 and Part 3.1. All lighting designs are to be prepared in accordance with AS / NZS 1158 for the above specified categories.



## **28 STRATA SUBDIVISION OF MULTI-UNIT FACTORY / WAREHOUSE DISTRIBUTION CENTRE COMPLEXES**

### **28.1 Development Controls**

1. Any strata subdivision of a multi-unit factory or warehouse distribution centre complex shall guarantee that each unit is provided with the appropriate level of car parking as per the car parking requirements contained in this DCP. Any visitor car parking, visitor bicycle parking and / visitor motorcycle parking shall be incorporated in the common area of any strata plan.