



Local Planning Policy

Pinjarra Industrial Area Design Guidelines

Prepared by Planning and Sustainability Services
May 2018



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1. Introduction

The Pinjarra Industrial Estate Design Guidelines apply to all development on Lot 500 on deposited plan 54893, (see appendix 5 for plan) zoned for 'Industrial Development' in the Shire of Murray Town Planning Scheme No 4 (TPS4). The area shaded in purple highlighted in Figure 1 – Pinjarra Industrial Estate location plan – outlines the applicable area.



FIGURE 1

Pinjarra Industrial Estate Location Plan

1.1 Background

The Pinjarra Industrial Estate is a State Government initiative implemented by the Western Australian land Authority, trading as LandCorp. The estate is located in the Shire of Murray approximately 2 km west of the Pinjarra townsite.

The Pinjarra Industrial Estate was established in the interest of social and economic sustainability for the region, and aims to facilitate local investment, business development and employment opportunities for Peel. The Pinjarra Industrial Estate is expected to play a particularly important role in consolidating the positive economic flow on effects of the mineral extraction and processing industries operating in the region.

Part II Clause 2.3.1 of TPS4 provides Council with the authority to adopt policies aimed at securing the objectives of the Scheme. Clause 13.3 of TPS4 provides Council with the discretion to vary the provisions of Part VII – General Provisions.

In May 2008 Council adopted the Pinjarra Industrial Estate Design Guidelines as a local Planning Policy under the provisions of Clause 2.3.1 of the TPS4 (gazetted 23 June 1989). Where the provisions of the Pinjarra Industrial Estate Design Guidelines incorporate variations to the provisions of the Shire of Murray TPS4 the provisions outlined in the Pinjarra Industrial Estate Design Guidelines shall prevail.

1.2 Purpose

The Pinjarra Industrial Estate design guidelines provide “easy to apply” criteria aimed at ensuring a consistently high standard of development throughout the life of the project, contributing to the creation of a pleasant working environment and maintaining value in business investment to the economic benefit of prospective developers and businesses.

The key objectives addressed by the Pinjarra Industrial Estate design guidelines are as follows:

- To achieve an attractive and unified development which acknowledges the goal of conserving and enhancing the natural environment by emphasising sustainable stormwater management and complimentary landscaping, as well as well designed, functional and efficient buildings which enhance the users corporate and professional image;
- To achieve greater sustainability in the built form through energy and water efficient design and fit out;
- To achieve water conservation through sustainable stormwater management, water wise landscaping and water efficient reticulation;
- To maintain the value of investment in industrial property in the Pinjarra Industrial Estate by emphasising quality development throughout the estate.
- To guide the use and development of land affected by Western Power High Voltage Transmission line Easements in accordance with Western Power’s Standard Easement Conditions; and
- To minimise the environmental impact of the development on the Peel – Harvey estuarine system and its associated catchments through appropriate management and disposal of stormwater.

2. Development Approval Process

All development proposals in the Pinjarra Industrial Estate require endorsement from both LandCorp and the Shire of Murray before construction can commence.

The endorsement will be a two stage process:-

Stage 1 involves the approval of the development proposal in general terms by both LandCorp and the Shire of Murray, resulting in an Approval to Commence Development issued by the Shire.

Stage 2 involves the approval by both LandCorp and the Shire of Murray of the detailed building documentation, resulting in the issue of a Building licence from the Shire.

The complete approval process is detailed below:

1. Prior to the submission of development proposals, purchasers and/or their design consultants are required to meet with LandCorp’s ‘Estate Architect’ to clarify the intent of the design guideline document.

LandCorp ‘Estate Architect’ contact details:-

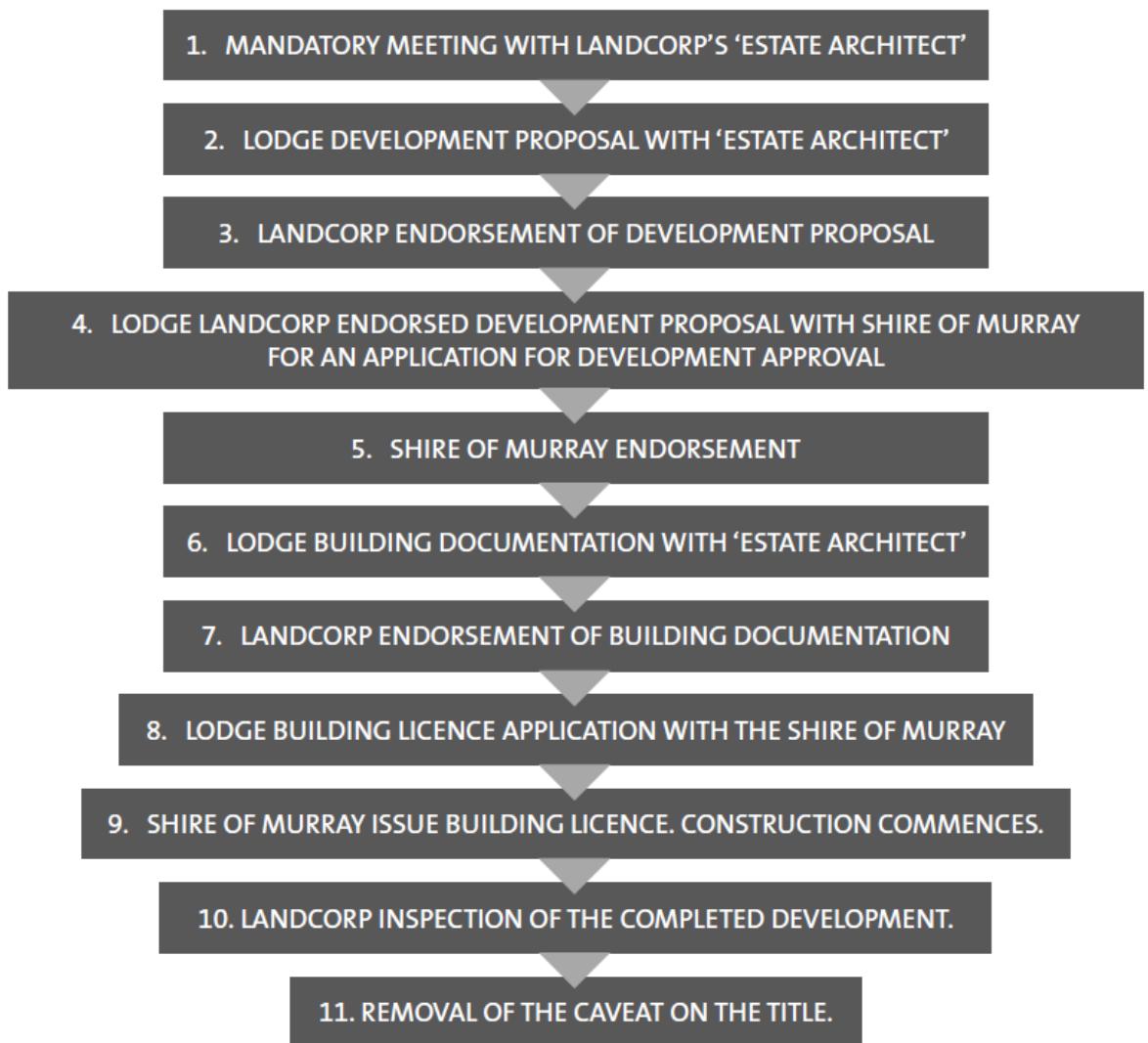
Pinjarra Industrial Estate
Hodge & Collard Architects
Level 3, 38 Richardson Street
West Perth WA 6005
Phone: 08 9322 5144 / Email: admin@hodgecollrd.com

2. Submission of development proposal to the 'Estate Architect'
3. LandCorp's 'Estate Architect' will assess each development proposal in accordance with the design guidelines. Section 2.1 outlines in detail submission requirements for the first stage of approval. Upon satisfactory performance under the design guidelines the 'Estate Architect' and the Shire of Murray will endorse the plans as compliant and advise LandCorp accordingly. LandCorp will forward an approval letter and copies of the stamped plans to the proponent and Shire of Murray for planning approval.
4. Submission of the LandCorp endorsed development proposal to the Shire of Murray for an Application to Commence Development.
5. Receipt of Shire of Murray planning approval.
6. Submission of detailed building documentation together with a copy of the Shire planning approval (including conditions) to LandCorp's 'Estate Architect' for endorsement. Section 2.2 outlines submission requirements for the second stage of assessment. The inclusion of a second level of assessment allows LandCorp and the Shire of Murray to enforce built form and building fit out sustainability initiatives proposed by the proponent.
7. Following LandCorp's and the Shire of Murray's endorsement an approval letter and approved plans will be sent to the proponent and Shire of Murray for building licence assessment.
8. Submission of the endorsed building documentation to the Shire of Murray for an application for a building licence.
9. Following receipt of the Shire of Murray building licence the proponent is permitted the commencement of development on site.
10. Upon practical completion LandCorp's 'Estate Architect' and other representatives will conduct a building inspection of the site and premises, to determine whether the completed development is in accordance with the approved building documentation.
11. Upon approval from LandCorp the caveat on the title can be removed.

To ensure efficiency in the design guideline assessment and approval process all development proposals should be forwarded directly to the 'Estate Architect' in electronic pdf format.

Figure 2 – Approval Process Flowchart

A summary of the approval process is included overleaf:



2.1 Stage 1 - Development Proposal Submission Requirements

Development proposal submissions to LandCorp must include the conceptual design for the site, building and landscaping as follows:

- a) Brief statement detailing the proposed operations on the premises.
- b) Sketch Plans:-
 - Site plan with boundary dimensions, existing contours, building location, building boundary setbacks, arrangement and dimensions of car parking areas, crossover/s, bin areas, loading and unloading areas, display areas, pedestrian/vehicular circulation; paving materials; calculations for site coverage, parking numbers and area of landscaping provided; intent regarding stormwater disposal including calculations, water storage tanks (if any) details of fencing and external pylon signage;

- Building plan/s showing internal arrangement of building showing: floor space usage and areas; the location of glazing and other openings;
 - Building elevations, sections and perspectives of the proposed buildings sufficient to describe the character of the proposal including: use of materials, colours and finishes (including detailed descriptive notes); building heights; and signage concepts.
 - Landscape concept plan showing the indicative earthworks, ground treatment, existing trees and proposed planting distribution, types and reticulation.
- c) A statement of the intent of the proposal regarding: active and passive sustainable initiatives for lighting, energy and water management; landscaping and irrigation. Such information could include for example considerations of the: building orientation; passive venting of the building; shading of windows and walls; building fabric insulation; high efficiency lighting and air conditioning plant and control systems; high efficiency water fixtures and fittings; stormwater recycling, etc.
- LandCorp and the Shire of Murray will attempt to assess Development proposal submissions within 10 working days. Adjustments will be required if the intent of the guidelines is not observed.

2.2 Stage 2 – Building Documentation Submission Requirements

Building documentation submissions to LandCorp are intended to ensure that the intent of the development proposal's, previously approved has been carried through to the documentation phase of the development. The submission must include the following:

- a) Brief statement detailing the proposed operations on the premises.
- b) Documentation drawings:-
 - Site plan with boundary dimensions, existing contours, building location, building boundary setbacks, arrangement and dimensions of car parking areas, crossover/s, bin areas, loading and unloading areas, display areas, pedestrian/vehicular circulation; paving materials; details of the stormwater disposal including calculations, water storage tanks (if any) details of fencing and external pylon signage; details of new constructions over the existing swales:
 - Building plan/s showing internal arrangement of the building/s indicating floor space usage and areas; the location of glazed and other openings; building materials;
 - Building elevations, sections and perspectives of the proposed buildings sufficient to describe the character of the proposal including: use of materials, colours and finishes (including detailed descriptive notes); building heights; signage concepts; and details of external vents, grilles and louvres.
 - Landscape plan showing the proposed earthworks, ground treatment, existing trees and proposed planting distribution, types and reticulation.
- c) Documentation building specification including details of the materials, plant, equipment, fittings and fixtures being incorporated into the building.
- d) A statement describing the proposal regarding: active and passive sustainable initiatives for lighting, energy and water management; landscaping and irrigation. Such information could include for example considerations of the: passive venting; glazing types, building fabric insulation; high efficiency lighting and air conditioning plant and control systems; high efficiency water fixtures and fittings; stormwater recycling, etc.

LandCorp and the Shire of Murray will attempt to assess Building documentation submissions within 10 working days. Adjustments will be required if the intent of the guidelines and compliance with the previously approved development proposals is not observed.

3. Land Use

Land use within the Pinjarra Industrial Estate is guided by both the provisions of the Shire of Murray TPS4 and the Pinjarra Light Industrial Area Outline Development Plan (LIA ODP). See figure 3 for OPD plan.

TPS4 specifies land uses that are permissible in the “Industrial Development” Zone and are outlined at **Appendix 1**.

When considering planning applications for various use classes referred to in TPS4, Council shall have regard to the permissibility designation for each use class in the Pinjarra LIA ODP. Proponents are encouraged to contact the Shire of Murray’s Planning and Development Services division prior to the mandatory meeting with LandCorp’s ‘Estate Architect’, in order to determine whether the intended land use is consistent with the provisions of the Pinjarra LIA ODP and the Shire of Murray TSP4.

The Pinjarra LIA ODP identifies two precincts, being

Precinct One – Light Industrial Precinct

Precinct One, located immediately south of Moores Road, is identified as the “Light Industrial Precinct”. The Light Industrial Precinct aims to provide for the use and development of the land for uses requiring high traffic exposure, but have very low off-site impacts.

Preferred uses include:

- Office;
- Showroom;
- Health Care/Studio;
- Laundromat;
- Dry Cleaning Agency;
- Cottage Industry; and
- Hire Outlet

Precinct Two – General Industrial Precinct

Precinct Two, comprises the balance of the Pinjarra LIA is identified as the “General Industrial Precinct”. The General Industrial Precinct aims to provide for the use and development of the land for uses that may require some buffering from adjacent non-industrial land uses, and are not likely to be developed to a standard suitable for Precinct One.

Preferred uses include:

- Factory Units;
- Warehouse and Storage;
- Motor Vehicle Wrecking;
- Service Industry;
- General Industry;
- Rural Industry;
- Fuel Depot;
- Public Utility; and
- Dry Cleaning Premises

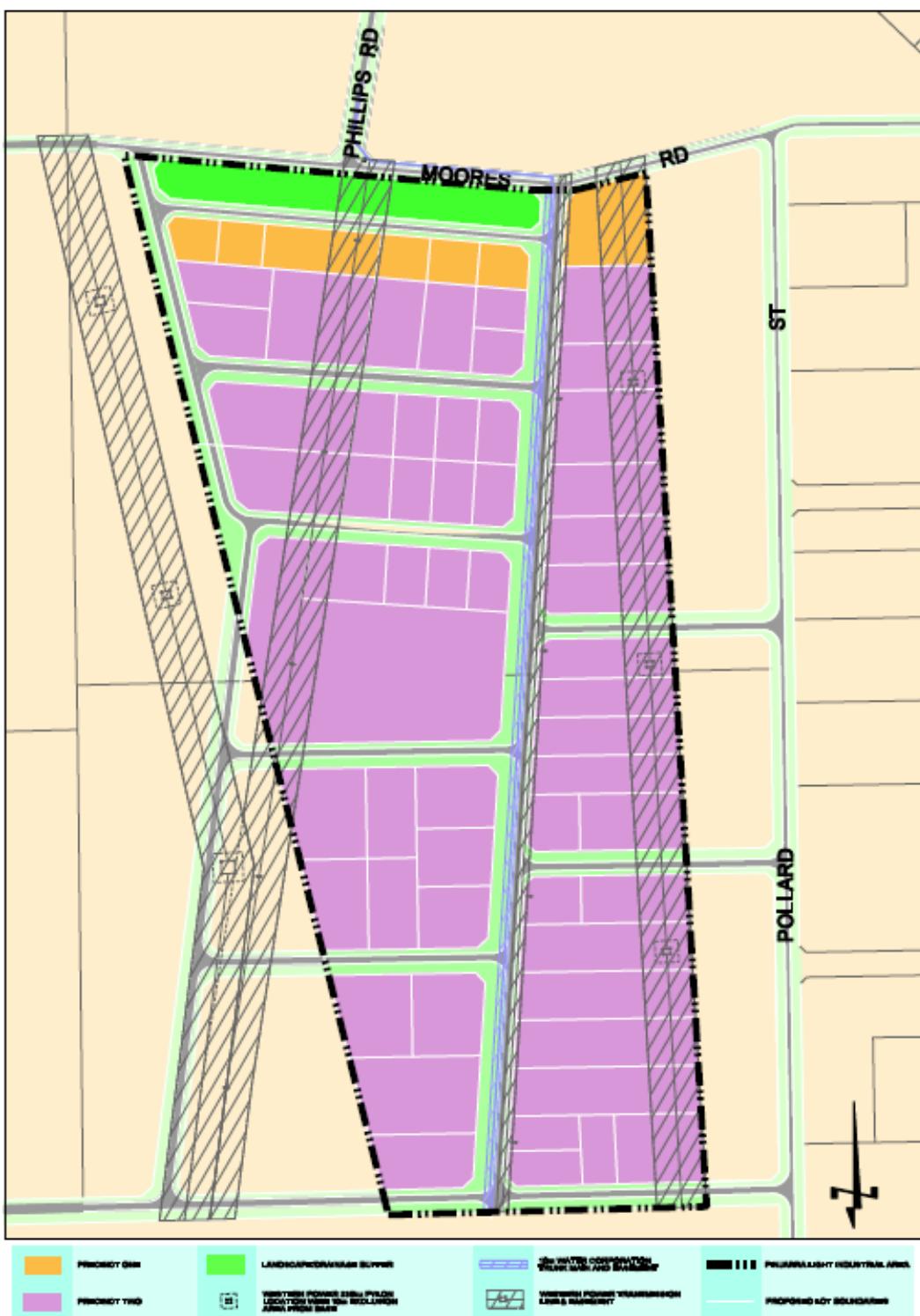


FIGURE 3
Pinjarra Industrial Estate

4. Site Guidelines

4.1 Site Layout and Building Orientation

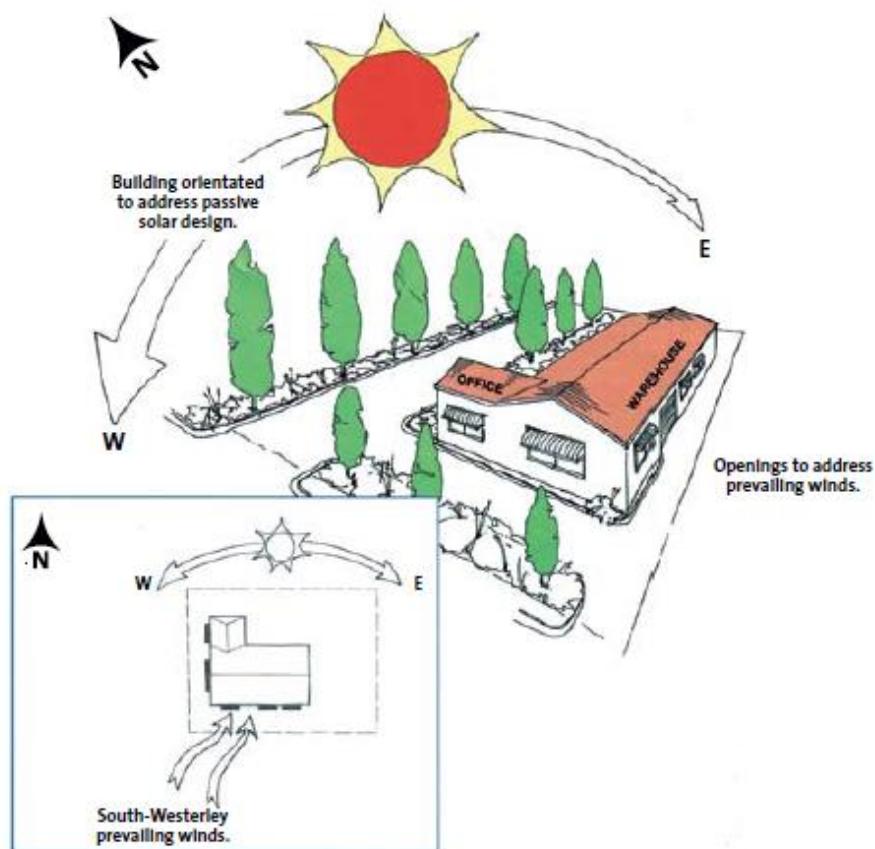
When undertaking site planning in the Pinjarra estate, buildings should be oriented and designed to conserve non-renewable energy. These simple and logical design factors can significantly reduce everyday running costs of buildings with little or no additional building cost.

Mandatory Requirements

- Orientation and openings to maximise the north and south exposure;
- Orientation and openings to maximise natural cross flow ventilation, eg cooling summer breezes;
- Minimise east and west facing orientation, openings and windows, or provide adequate shading;
- Well considered landscaping will provide valuable shade throughout summer and allow for the use of the winter sun.

FIGURE 4

Building orientation and passive solar design.



4.2 Site Coverage

Mandatory Requirement

Maximum site coverage shall be in accordance with the provisions of Table II – Non Residential Development Standards of TPS4 in consideration of setbacks, landscaping, parking and the Building Code of Australia requirements as outlined in **Appendix 2**. Where setback, parking and landscaping requirements outlined in this document differ from those outlined in Table II - Non Residential Development Standards of TPS4, the provisions of the Pinjarra Industrial Estate design guidelines shall prevail.

All development in the Pinjarra Industrial Estate must achieve a minimum site coverage of 20% of the unencumbered lot area. Western Power Easements encumber certain lots throughout the estate.

4.3 Building Layout and Setback

Mandatory Requirement

All development, including all buildings and structures, car parking and hardstand areas must be setback a minimum of 11 metres from the lot boundary on primary street frontages and 5 metres from the lot boundary on secondary street frontages. The determination between primary and secondary frontages is at the discretion of LandCorp and the Shire of Murray. Figures 5 & 6 provide a typical road cross section of any given street within the Pinjarra Industrial Estate. Figures 7 & 8 outline the variety in site layout and building setback options for the estate.

The maximum building setback from the primary street frontage is 25 metres.

Side and rear setbacks outlined in Table II - Non Residential Development Standards of TPS4 **Appendix 2** do not apply within the Pinjarra Industrial Estate and may be reduced to nil, subject to LandCorp approval, and Shire of Murray planning, engineering and building approval.

Developers are encouraged to setback buildings a minimum of 3 metres from both the side and rear lot boundaries to assist with natural light penetration and natural cross flow ventilation. Developments featuring a nil side and rear setback will be required to demonstrate ventilation and natural lighting capability in accordance with LandCorp's development standards. See section 5.4 for guidance on natural light and ventilation.

4.4 Geotechnical Standards

All lots in the Pinjarra Industrial Estate have been prepared with a minimum of 1 metre of clean fill over the natural sandy/clay soils. The preparation provides for an 'S' classification under AS 2870 (1996).

Lots have generally been finished with a grade towards the surrounding roads. Therefore as level slabs are expected to be constructed some earthworks on site will be necessary.

Purchasers will need to undertake their own geotechnical and structural investigations when constructing buildings on site if any proposed earthworks comprise the 1 metre depth of fill above the natural sandy/clay soils or where the structural loads are outside that allowed for in AS2870.

FIGURE 5

Typical streetscape cross section: Aerial



FIGURE 6

Typical streetscape cross section: Elevated



4.5 Vehicle Access and Parking

Mandatory Requirement

The provision of car parking bays shall be in accordance with the provisions of Table II – Non Residential Development Standards of TPS4 **Appendix 2**. Figures 7 & 8 outline a variety of site and car parking layout options for the estate.

All car parking and vehicle access must be contained on site.

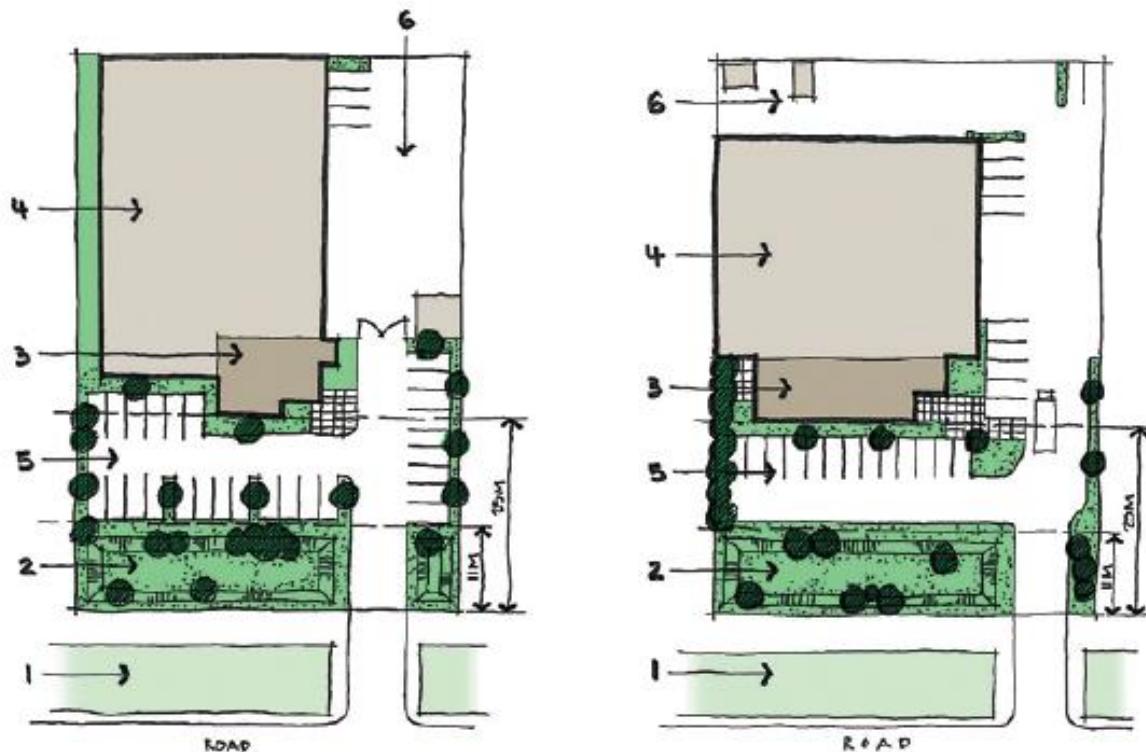
Roadways and parking areas within a development must be planned to achieve the following:

- Where buildings are setback the maximum 25 metres from the primary street, visitor / staff parking is encouraged in the 14 metres between the allotment drainage swale (11 metres wide) and the front building line. The 14 metres will provide sufficient space for one row of visitor/staff car parking bays, a vehicle manoeuvring area, one pedestrian access path and a landscape strip. Refer to figure 7.
- Where buildings are setback the minimum 11 metres from the primary street, visitor / staff parking is encouraged adjacent to or behind the building(s) that are commonly accessed. Refer to figure 8 .
- Service / haulage vehicles are to be separated from visitor and staff parking areas, screened from the street and located at the rear or sides of the buildings behind the front building line;
- Provide clear paths for pedestrian movement separate from areas of frequent vehicular movement;
- Parking areas are to be provided with suitable species of shade tree at a ratio of 1 per 4 car bays, evenly throughout the parking areas;
- Parking areas must be designed to channel water into the vegetated allotment swale (refer to chapter 5.1 Stormwater Management) and;
- Parking areas and access driveways must be paved or sealed with asphalt.

Purchasers will be provided with a vacant lot containing an allotment drainage swale. Purchasers and/or developers are required to construct vehicle cross overs in accordance with Cossill and Webley Consulting Engineers' drawing No. 5856-01-600 at their own cost. Refer to **Appendix 3** for cross over design.

FIGURE 7

Site layout: 25 metre primary setback



LEGEND

- 1 Western Power Easement
- 2 Allotment Swale - Landscaped
- 3 Office Component
- 4 Industrial Unit
- 5 Parking Area – Landscaped
- 6 Service Yard

FIGURE 8

Site layout: 11 metre primary setback



4.6 External Service and Storage Areas

Mandatory Requirement

External service and storage areas shall be designed to comply with Clause 7.4 of TPS4 as follows:

- No open storage of goods, unserviceable vehicles or machinery shall be carried out on within the front boundary setback area (forward of the building line), which shall be used only for landscaping and drainage, car parking, servicing, loading and unloading, or where appropriate and subject to the approval of the Council, for trade display; and
- All open storage areas shall be screened from the street and adjoining properties by landscaping, fencing and/or other means acceptable to LandCorp and the Shire of Murray.
- Rubbish bin storage areas must also be screened from all road frontage. The dimensions and location of rubbish bin storage areas will be at the discretion of LandCorp and the Shire of Murray.
- All plant and equipment storage areas are to be adequately screened from public view from both road frontages.

4.7 Boundary Fencing

The intent of boundary fencing in the Pinjarra Industrial Estate is to provide security for businesses without compromising the visual aesthetics and overall character of the development. LandCorp's 'Estate Architect' should be contacted to provide advice on different site layouts and fencing options.

Mandatory Requirement

- Where a building is setback the maximum 25 metres from the front lot boundary no fencing is permitted forward of the building line.
- Where a building is set back the minimum 121 metres from the front lot boundary, or 5 metres from the secondary street boundary, no fencing will be permitted forward of the 25 metre maximum building setback line. LandCorp and the Shire of Murray may choose to exercise discretion in reducing the front and/or side fencing setback requirements where site security is considered a risk.
- The minimum fencing standard in the Pinjarra estate is an 1800mm high metal tube framed vertical pale and horizontal rail fence with powdercoat finish. All vertical pale fencing must feature a minimum nominal open area of 80% (see figure 9 for example of vertical pale fencing).
- Behind the 25 metre front setback line, the minimum standard for side and rear boundary fencing is black PVC galvanized link mesh fencing (barbed wire is permitted). No link mesh fencing is permitted within 25 meters from any boundary line with road frontage.
- Where a building is set back the maximum 25 metres, vertical pale fencing is permitted adjacent to the front building line but not in front of the building.
- Electric fencing will only be permitted if considered suitable by LandCorp and the Shire of Murray.

FIGURE 9

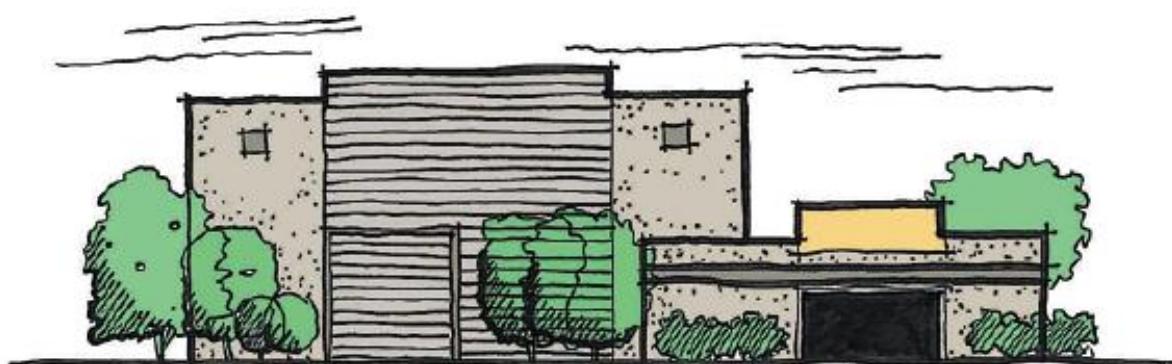
Standard vertical pale fencing



FIGURE 10

Landscaped Screening

Use of landscaping to soften the built form / provide sun shading and add visual interest.



5 Natural Resource Management

5.1 Stormwater Management

The Pinjarra Industrial Estate is located in the catchments of the Peel Inlet and Harvey Estuary. The estate is positioned in close proximity to wetland systems in the Murray groundwater area. Natural terrain in the estate consists predominantly of heavy clays which restrict the rate of natural infiltration of stormwater on site.

In recognition of Pinjarra's environmental sensitivities LandCorp has taken a unique approach to stormwater management. The estate features a series of private property allotment swales and roadside drainage swales, which collect and convey stormwater overflow from individual lots and road reserves to a vegetated compensation basin at the northern end of the site abutting Moores Road. All drainage swales in the Pinjarra Industrial Estate will be vegetated to the satisfaction of LandCorp and the Shire of Murray.

The Pinjarra Urban Water Balance Management Plan was endorsed by the Department of Water in April 2007, and is recognised by the department as demonstrating best practice in water sensitive urban design for an industrial estate.

Mandatory Requirement

Stormwater management shall meet the following criteria:

- i. Each property is required to retain stormwater runoff equivalent to a 1 year ARI, 1 hour duration rainfall event or 17 mm of rainfall, using a minimum coefficient of runoff of 0.85 over the allotment area, excluding Western Power transmission easements where these do not contribute to the catchment.
Example – Stormwater runoff required to be retained for 3,600 m² site where 600 m² is taken by Western Power easement + (3,600 – 600) x 0.85 x 0.017 = 43.4 m³;
- ii. Stormwater runoff can be directed towards the allotment swale (wherein the subdivider has provided a nominally sized retention swale) and/or to soakwells and
- iii. Depending on the usage of the lot: if the local authority deems it as creating high level of pollutants (chemical and hazardous materials), a lined retention basin to capture any runoff from the designated polluted area (to be treated or removed from the site), will be required.

Notes:

1. Each property owner shall provide calculations to show the required stormwater retention capacity has been achieved for the proposed site development. Stormwater calculations must be submitted with building and landscaping plans to LandCorp and the Shire of Murray for approval.
2. The on-site drainage design should reflect the requirements of the approved GHD Urban Water Balance Plan, for the subdivision dated February 2007. A copy of the report is available on the LandCorp website www.landcorp.com.au (Go to project finder and select Pinjarra).

5.2 Landscaping

Mandatory Requirement

- All plant species must be selected and planted in accordance with the swale and open area planting list (figure 11).
- All approved plant species must be planted in the appropriate planting zones as outlined in figure 12. For example: waterlogged swale planting, intermediate swale planting, intermediate swale planting, and dry planting.

- The purchaser is required to vegetate and maintain the full extent of the 10 metre wide allotment drainage swale, which spans across the front section of the lot, to the satisfaction of LandCorp and the Shire of Murray.
- Landscaped areas on all lots are to comprise a minimum of 10 metres in depth from primary street frontages, and 5 metres in depth from the secondary street frontage where applicable.
- A minimum one metre wide landscape strip, utilising small shrubs, ground covers and herbs, and/or strap leaf from the dry planting zone plant list (figure 11) is required at the base of any building line with road frontage.
- Where a development incorporates a visitor car parking area between the allotment swale and front building line, a pedestrian access path of 1.5 metres in width is to be constructed between the visitor car park area and building landscape area. The pedestrian access path must be constructed to Australian Standards 1428.1-2001: Design for access and mobility – General requirements for access – New building work.
- Where the front building line is positioned within the 11 to 25 metre setback range from the primary lot boundary, a minimum one metre wide landscaping strip is required along each of the side lot boundaries, between the primary lot boundary and the front building line;
- All landscape and planting shall be undertaken by a qualified contractor.

FIGURE 11

Swale and open area planting list

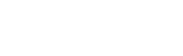
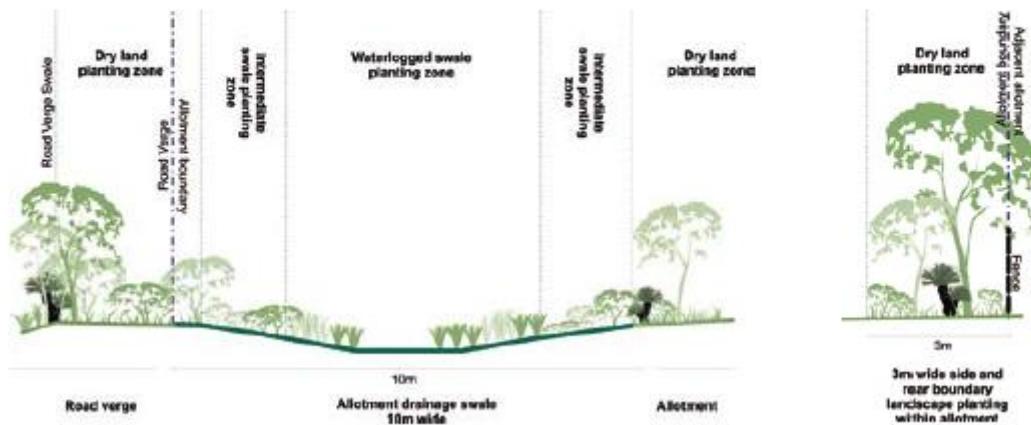
SWALE & OPEN AREA PLANTING				
Botanical Names	Common Names	Height	Spread	
DRY LAND PLANTING ZONE (very top of swale or sandy soil planting)				
TREES AND LARGE SHRUBS - (planting area average 1 per 5m²)				
	Banksia menziesii Firewood Banksia	5m	3m	
	Corymbia calophylla Mari	25m	15m	
	Corymbia calophylla rosea Pink Mari	25m	15m	
	Corymbia ficifolia Red Flowering Gum	10m	8m	
	Eucalyptus marginata Jarrah	25m	15m	
MEDIUM SHRUBS - (planting area average 1 per 2m²)				
	Acacia saligna Golden Wreath Wattle	3m	2m	
	Callistemon phoeniceus Lesser Bottlebrush	4m	3m	
SMALL SHRUBS - (planting area average 1 per 1m²)				
	Acacia pulchella Prickly Moses	1.5m	1m	
	Eremaea fimbriata Pink Eremaea	1m	0.5m	
	Eremaea purpurea Purple Eremaea	1.5m	1m	
	Kunzea recurva Kunzea	1.5m	1m	
	Melaleuca incana Grey Honey Myrtle	2m	2m	
	Melaleuca radula Graceful Honey Myrtle	1.5m	1m	
	Melaleuca uncinata Broom Bush	2m	2m	
	Oxylobium lineare Red Pea	2m	2m	
	Periclymmia ellipticum Swamp Tea Tree	1.5m	1m	
GROUND COVERS AND HERBS - (planting area average 3 per 1m²)				
	Agrostocrinum scabrum Blue Grass Lily		Herb	
	Conostylis aculeata Bristly Cotton Heads		Herb	
	Clematis pubescens Old Mans Beard		Groundcover	
	Hardenbergia comptoniana Wild Wisteria		Groundcover	
	Kennedia prostrata Running Postman		Groundcover	
	Sollya heterophylla Blue Bells		Herb	
STRAP LEAF - (planting area average 3 per 1m²)				
	Anigozanthus viridis Green Kangaroo Paw		Strap-leaf	
	Dianella revoluta Blue Berry Lily		Strap-leaf	
	Patersonia occidentalis Purple Flag		Strap-leaf	
	Sowerbaea laxiflora Purple Tassels		Strap-leaf	
INTERMEDIATE SWALE PLANTING ZONE (damp soil- intermediate to top of swale)				
TREES AND LARGE SHRUBS - (planting area average 1 per 5m²)				
	Banksia littoralis Swamp Banksia	6m	3m	
	Melaleuca rhiphiophylla Swamp Paperbark	10m	5m	
	Melaleuca preissiana Mooneah	6m	3m	
MEDIUM SHRUBS - (planting area average 1 per 2m²)				
	Astartea fascicularis Astartea or False Baeckea	2m	1m	
	Grevillea glabrata Smooth Grevillea	2m	1m	
	Taxandria linearifolia Swamp Peppermint	3m	2m	
	Viminaria juncea Swishbush	2m	1m	
SMALL SHRUBS - (planting area average 1 per 1m²)				
	Aotus gracilima Aotus	1m	1m	
	Calothamnus hirsutus Hairy Claw Flower	1m	1m	
	Eremaea pauciflora Orange-flowered Eremaea	1m	1m	
	Melaleuca lateritia Robin Red Breast Bush	1.5m	1m	
	Verticordia densiflora Feather Flower	1.5m	1m	
WATERLOGGED SWALE PLANTING ZONE (lowest swale planting)				
RUSHES AND SEDGES - (planting area average 3 per 1m²)				
	Baumea juncea Twig Rush		Rush	
	Juncus pauciflorus Pale Rush		Rush	
	Juncus subsecundus Finger Rush		Sedge	
	Lepidosperma longititudinale Pithy Sword sedge		Sedge	
	Meeboldina cana Meeboldina		Sedge	

FIGURE 12

Cross section of local endemic plant zone groupings



5.3 Landscape Irrigation

Mandatory Requirement

In accordance with this provision when planning the site layout and landscaping, lot owners are required to:

- Install a low flow trickle irrigation system;
- Install a programmable water controller/timer system;
- Direct stormwater runoff from building and hardstand area to the allotment drainage swale, as per section 5.1 Stormwater Management.

Best Practice Option:

It is recommended that purchasers install external rainwater tanks for irrigating landscaped areas and/or internal domestic use such as toilet flushing.

5.4 Natural Light and Ventilation

Further to the passive site layout and building orientation guidelines outlined in section 4.1 the following building design initiatives will aid the conservation of non-renewable energy and improve employee comfort by assisting the penetration of natural light and ventilation. Figures 13 & 14 illustrate natural light and ventilation building treatment options.

Section 4.3: *Building Layout and Setback*, encourages developers to incorporate a minimum side boundary setback of 3 metres. This approach allows buildings to feature openings on both side walls therefore assisting natural light penetration and cross flow ventilation. However, in the interest of maximising the developable area of industrial land in the estate, LandCorp and the Shire of Murray are prepared to consider alternative design solutions to assist with natural light penetration and ventilation so that buildings can be constructed with a nil side and rear setback.

The following building treatments are optional initiatives designed to assist natural light penetration and building ventilation. Developers will not be bound to, nor should be limited to, the following design treatments, however where nil side and rear setbacks are proposed, building designers will need to demonstrate the building's ability to capture natural light and allow cross ventilation to the satisfaction of LandCorp and the Shire of Murray.

Natural light

Roof lights

To introduce UV filtered sunlight into the centre of the building (consideration should be given to minimising solar gain by careful selection of the translucent rooflight material).

Clerestory windows

To introduce natural light, preferable diffuse southern light, into the centre of the building, thereby reducing the requirement for artificial lighting.

Ventilation

Side wall ventilation openings

To encourage cross-ventilation through the building

Clerestory windows

To provide an outlet for warm air rising to a high level within the building and to promote cross ventilation.

Wind powered ventilation turbines

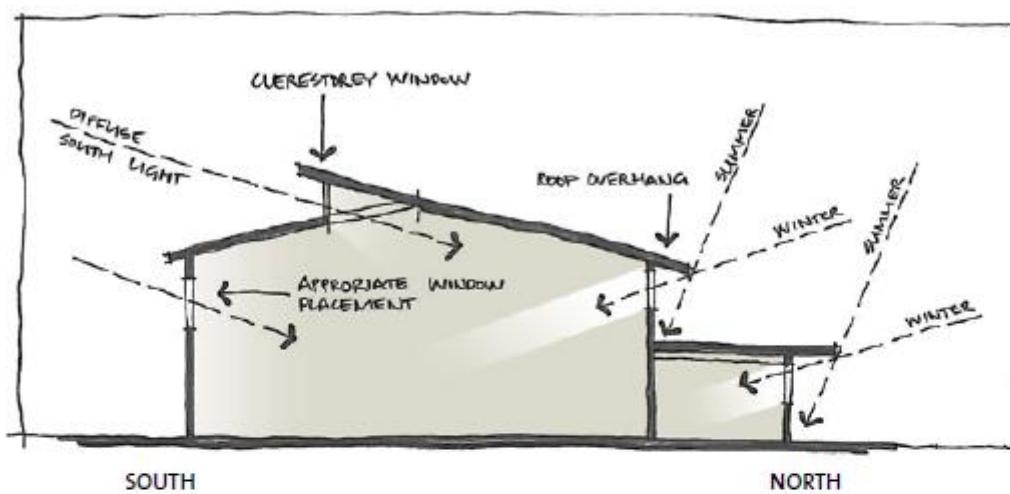
To aid the relief of hot air at high level and to encourage cooler air to enter at low level in the building, thereby generating a 'chimney stack effect' for air circulation.

Roof vents active or passive

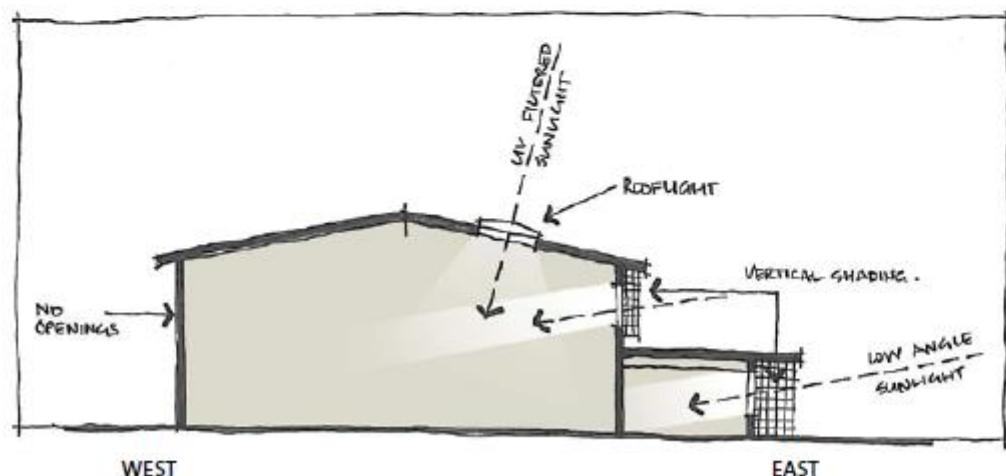
Large relief vents or cowl to further increase upward air flow in the building.

FIGURE 13

Natural light building treatments



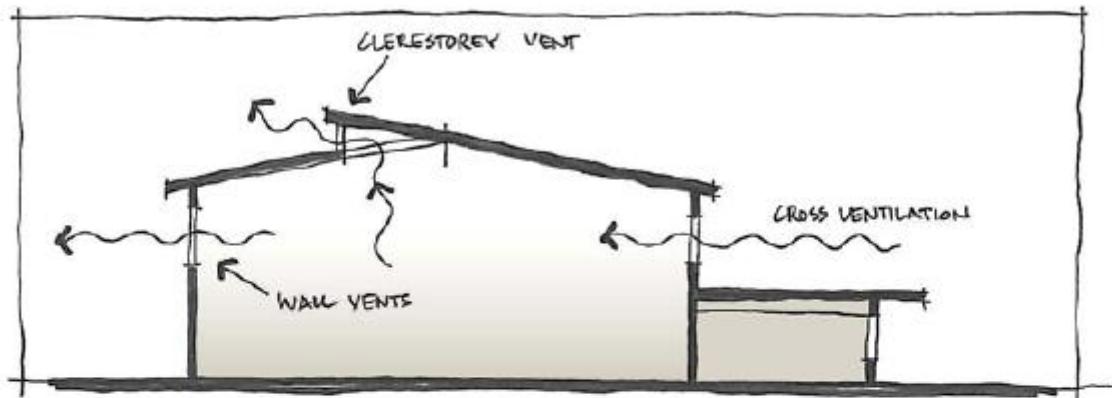
LIGHTING - 1



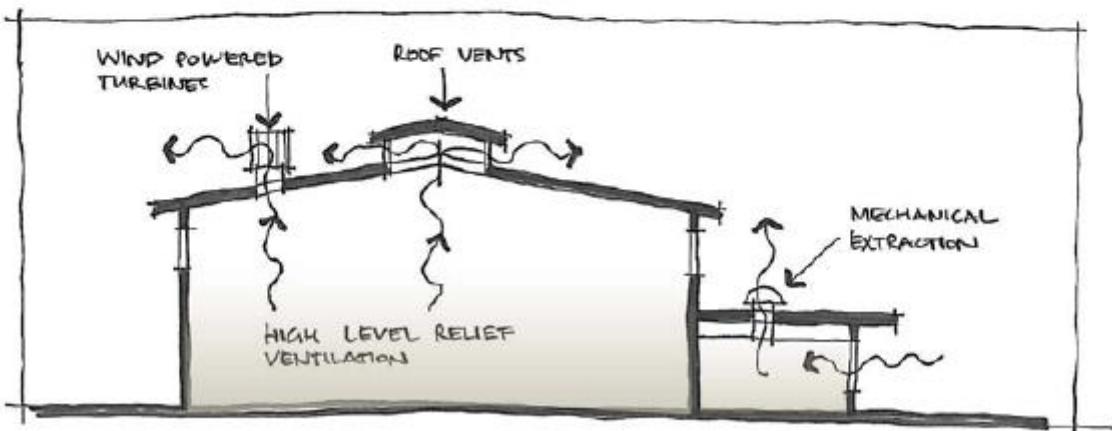
LIGHTING - 2

FIGURE 14

Ventilation building treatments



VENTILATION - 1



VENTILATION - 2

5.5 External Lighting

Mandatory Requirement

- High frequency compact fluorescent lamps or T5 Triphosphor fluorescent lamps are required for external areas.
- Lighting controlled by timer controls or motion sensors for all external lighting.
- No glare of light spill shall adversely impact adjoining properties or passing motorists.

5.6 Internal Lighting

Mandatory requirement

As a minimum standard all developments in the Pinjarra Industrial Estate must feature, but shall not be limited to:-

- Light fittings that utilise high efficacy light sources such as high pressure sodium discharge lamps or T5 triphosphor fluorescent lights.
- Daylight / occupancy control systems. These control systems generally provide an average 5 year payback through energy savings.
- Lighting controlled by timer controls, photosensitive cells, or motion sensors to control operation of specific light fixtures and fittings.

5.7 Water Conservation

Mandatory requirement

The supply of potable water in Western Australia is a critical issue. The following options for building fit out are consistent with the Building Code of Australia (BCA) Five Star Plus energy and water efficiency measures:

- solar or five-star gas (or heat pump) hot water systems;
- water efficient showerheads;
- water efficient tap fittings in all kitchen sinks and bathroom basins; and
- water efficient dual-flush toilets.

6 Built Form

6.1 Building Character and Detail

Mandatory Requirement

Buildings must be designed to address the street, with consideration given to impression from the street and at a point of entry. The main entrance to the building must be clearly visible or 'signalled' in the design.

The following principles are a guide to the development of an appropriate architectural character and aim to achieve a good standard of building design throughout the estate. See figures 16 & 17 for sketched examples of appropriate and inappropriate built form.

Building frontage and entry:

- The front elevation must be designed to address the street, provide a corporate image and an inviting entrance;
- Building elevations on corner lots must address both street frontages with a high standard of architectural design;
- Architectural form and character must avoid large unrelieved expanses of wall or roof, where they can be seen from the public realm;
- Where more than one building is planned for a site, their design must result in the creation of a group of integrated buildings presenting a harmonious image;
- The main entrance is to be on the front elevation or close to the front of the building, clearly visible from the street; and
- Entrance points to buildings are to be designed as focus points and must provide protection for pedestrians by means of substantial integrated building elements such as a veranda, canopy or colonnade.



6.2 Materials, Finishes and Colour

Mandatory Requirement

Proposals which exhibit broad facades of a uniform finish will not be acceptable. The aim should be to divide up the facades into contrasting smaller areas by introducing colours, materials and forms.

Simple building structures need not be bland and unattractive; consideration should be given to 'breaking up' the façade to create interest:

- Use of different materials such as concrete panels, profiled metal cladding, fibre cement cladding, face brickwork, stone panels separately or in combination.
- Use of the above differing materials to express changes in the form of the building.

- Feature elements such as the louvre vents and screens, exposed steel columns and bracing, careful placement of roller shutters, to achieve good design.
- Use of vertical, horizontal and/or angled grids to break up unrelieved wall surfaces. These could be expressed feature joints in pre-cast concrete panels, fibre cement panel joints, brick banding or rendered panels.
- Division of the façade into top, middle and bottom elements using differing materials, grading of colours, horizontal lines such as dado line or parapet cappings.
- Projecting features such as canopies, sun shading, overhanging roof etc. to create shadows on the facades.

Where a single development comprises multiple units occupied by multiples independent tenancies, the use of colours, finishes and materials for each unit should be complimentary, whilst allowing each tenancy to be easily distinguishable and identifiable.

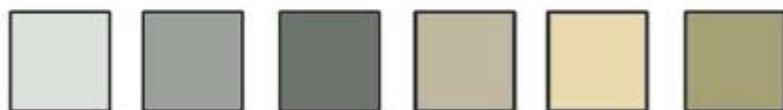
Building colours should generally be sympathetic and complementary with the natural environment and site landscaping. Refer to figure 15 for built form colour schedule.



Sample colours are indicated below.

FIGURE 15

Built form colour schedule



Muted Colours

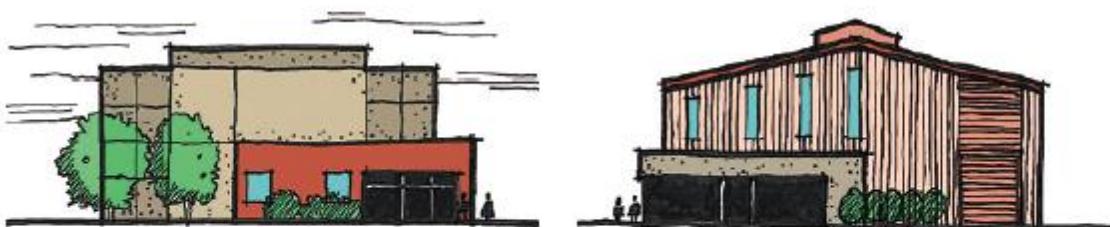


Highlight Colours

- Large areas of one material should be treated with muted colours and tones avoiding strong hues. Large expanses of zincalume metal finished cladding will not be accepted.
- Small and important building elements such as a feature wall, canopies, steel bracing and columns, sunscreens, ventilation louvres etc should be treated with strong highlight colours to provide visual interest and relief on the building facades.

FIGURE 16

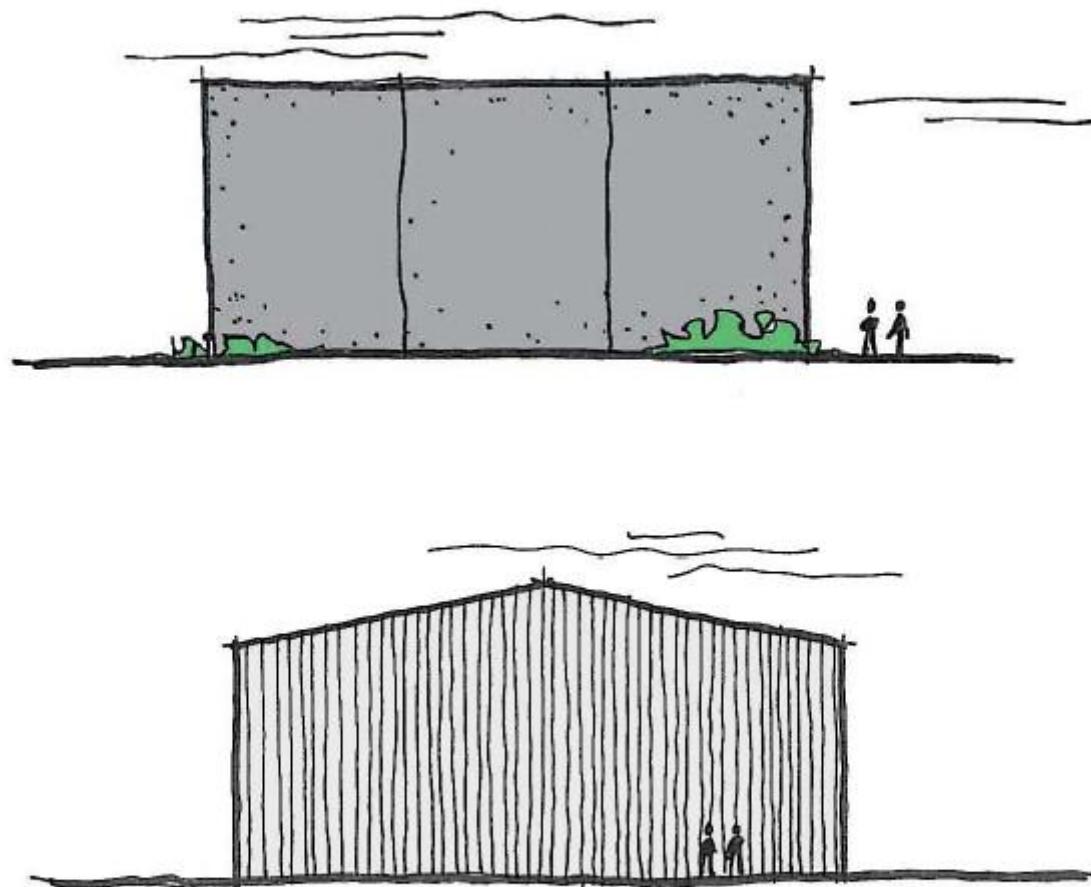
Appropriate built form



- Variety of building forms, materials and colours.
- Expression of the office and factory / industrial unit as separate built forms.

FIGURE 17

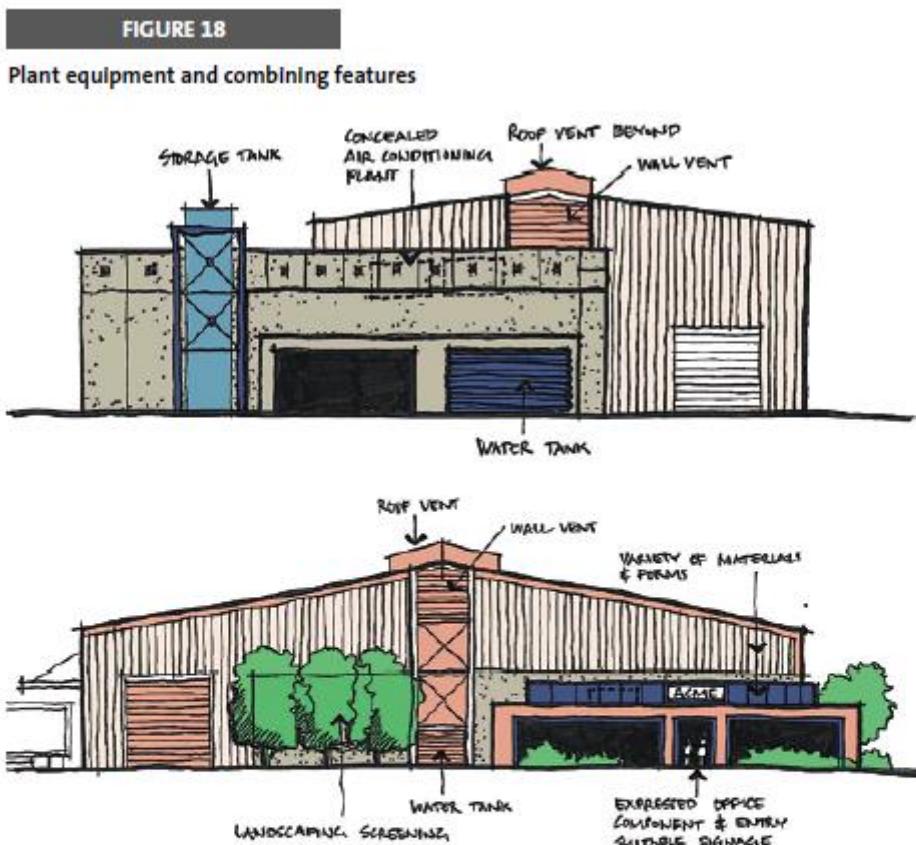
Inappropriate built form



- No variety in the forms, materials and colours.
- Large expanse of one material on one plane is unacceptable.

6.3 Plant and Equipment

All plant and equipment should be screened or remote from public areas, particularly from the street. The exception to this may be where stacks or ductwork that are necessary for the building function are carefully considered and become feature design elements of the building. See figure 18 for examples of how plant and equipment can complement the built form outcome.



PLANT AND EQUIPMENT

- Consider using plant and equipment as design features
- Conceal unsightly plant such as air conditioning units
- Use of passive sustainable elements (water tanks / ventilation louvres) as design features

COMBINING FEATURES

- Varied built form expressing different forms, materials and colours
- Use of landscaping for screening and shading
- Expressed office form and entry
- Sustainable elements as design features
- Appropriate building signage

6.4 Outbuildings and Other Structures

Where there are numerous separate buildings on the site, the design of each should be considered with the whole of site planning so that they may present as an integrated development; where possible, future expansion and staging should be considered so as to integrate these buildings. The use of colours, form and materials should be complimentary and consistent.

6.5 Signage and Graphics (Advertising)

Mandatory Requirement

Signs attached to buildings shall be designed to be an integral part of the building, eg recessed in the façade, fascia or awning and incorporated as three dimensional elements to add quality to the overall design concept.

- Signage shall meet the following criteria:
- Only one free standing or composite sign is permitted per lot;
- Where multiple occupancy is proposed, the composite sign may have one panel per occupancy;
- All signs shall be designed as an integral part of the building fabric, and shall be of a standard equal to and consistent with the building design and detail;
- Signage painted directly to a building facade will not be permitted; and
- All signs throughout a lot shall be of consistent character in design to maintain the amenity of the area.

FIGURE 19

Signage

Appropriate signage treatments integrated into the building form and aesthetic..



7 Detailed Provisions

7.1 Western Power

Purchasers are encouraged to utilise the land in the Western Power easements. All development and subsequent use of land on lots which are subject to an easement on title relating to a Western Power transmission line are subject to compliance with Western Power's Standard Easement Conditions. Conditions as outlined in Appendix 4.

All applications for the use and development of land affected by a Western Power easement should be referred to Western Power for their consideration. Western Power has provided the following advice with respect to development within the easement area:

- Western Power does not permit ground levels to be altered without conducting a clearance calculation to ensure the conductor height complies with the Australian Standard. This calculation is done at the cost of the party changing the Status quo. If the minimum phase-ground clearance cannot be maintained, the proposal will be refused.
- Lighting will be subject to both Western Power's operational requirements, and the Australian Standard regarding safe electrical clearances. Any calculations required to ensure the proposed installation will meet the standard and WorkSafe regulation 3.64, will be carried out by Western Power at the proponent's cost.
- Any car park facilities installed within the easement must be for short term parking (business parking) and can only be used by vehicles less than 4.5 metres in height including attachments. Storage is not permitted with the easement.
- The installation of soak wells for stormwater control must be approved by Western Power. Earthworks and installation of infrastructure in the easement must comply with WorkSafe requirements for working near overhead powerlines. There will be a cost involved if the minimum clearance cannot be maintained, this involves permits for working near energised equipment, and/or the cost of a shutdown if necessary. Western Power cannot guarantee that a shutdown of the transmission line is possible.
- Any metallic fence must be earthed to comply with Australian Standards. The proponent will need to engage an electrical consultant to determine the extent of earthing required, if any. Western Power will provide all electrical data requested by the electrical consultant.

Developers / designers are encouraged to liaise with Western Power's Environment and Land Management Branch prior to the preparation of plans for any development in the vicinity of any Western Power easement.

Western Power customer contact number 13 1087.

7.2 Water Corporation Trunk Main

The Water Corporation's DN1400 Stirling Trunk Main traverses the site. Water Corporation guidelines titled, "*General Guidelines for Working on or in the Vicinity of Trunk and Bore Mains*" can be obtained directly from the office of the Water Corporation in Leederville.

APPENDIX 1

Shire of Murray Town Planning Scheme No. 4

Table 1 - Zoning Table

Extract from the Shire of Murray Town Planning Scheme No. 4 - TABLE I – Zoning Table

Use Classes	Industrial Development	Use Classes	Industrial Development	Use Classes	Industrial Development
Single House	X	Car Park	AA	Hazardous Industry	SA
Attached House	X	Service Station/Petrol Filling Station	AA	Day Care Centre	X
Grouped Dwelling	X	Bank	X	Kindergarten	X
Aged or Dependent Persons Dwellings	X	Office	IP	Health Centre/Studio	AA
Home Occupation	X	Consulting Room(s)	X	Infant Welfare Clinic	X
Caretakers House	IP	Medical Clinic	X	Public Amusement	X
Retirement Village	X	Showrooms	AA	Place of Public Worship	X
Boatlifts	X	Warehouse & Storage	AA	Place of Public Assembly	X
Residential Hotel	X	Dry Cleaning Agency	AA	Civic Building	X
Lodging House	X	Funeral Parlour	AA	Public Utility	AA
Chalet Park	X	Hardware Outlet	X	Private Club	X
Caravan Park	X	Hire Outlet	AA	Family Day Care Centre	X
Camping Area	X	Landscape Supplies	AA	Rural Pursuit	X
Bed and Breakfast Accommodation	X	Garden Centre	X	Garden Centre	
Park Home Park	X	Open Air Display	AA	Rural Industry	AA
Hotel	X	Laundromat	AA	Veterinary Clinic	X
Motel	X	Light Industry	AA	Veterinary Hospital	X
Tavern	X	General Industry	AA	Stables	
Wine Shop	X	Factory Units	AA	Kennels	X
Liquor Store	X	Service Industry	AA	Rural Produce Stalls	X
Licensed Restaurant	X	Motor Vehicle Wrecking	AA	Intensive Agriculture	X
Winery	X	Extractive Industry	X	Cattery	X
Shop	X	Rural Industry	AA		
Restaurant/Café	X	Fuel Depot	AA		
Take Away Food Outlet	AA	Dry Cleaning Premises	AA		
Car, Caravan Hire	X	Noxious Industry	X		
Car, Boat, Caravan & Agric Equip Sales	X	Cottage Industry	AA		

Note: the symbols used in the cross references in the Table 1 extract have the following meanings:

Symbol	Definition
P	Uses which are permitted provided that they the relevant standards and requirements laid down by the Scheme and all conditions (if any) imposed by Council in granting planning approval are complied with.
AA	Uses which the Council may at its discretion permit provided it is satisfied that such use would not be contrary to the orderly and proper planning of the area.
SA	Uses and development which the Council exercising the discretionary powers available to it may approve under the Scheme except that such approval shall not be granted by Council until special notice has been given in accordance with Clause 5.5.2 of the Scheme.
IP	Uses and developments which are not permitted unless such use or development is incidental to the predominant use of the land as decided and approved by Council.
X	Uses and developments which are not permitted under the Scheme

Uses not listed in Table 1 shall be determined as per Clause 5.2.3 of the Scheme.

Note: This extract is intended to be used as a guide only. Users should refer to the full copy of the Shire of Murray Town planning Scheme No. 4 (as amended) for further detail and land use class definitions.

APPENDIX 2

Non-Residential Development Standards

NOTES: See also the Special and General Provisions

cps = car parking spaces
 gfa = gross floor area
 * = standard to be determined by Council

Where a use is permitted in a Zone other than that stated in this Table, the Council may apply the standards to that Zone within which the use is proposed as is appropriate.

USE/ DEVELOPMENT	SETBACKS			SITE COVERAGE	LANDS- CAPING	CAR PARKING REQUIREMENTS	SPECIAL REMARKS
	FRONT	SIDE	REAR				
Shops and Banks Cafe Restaurant Take-Away Food Outlets, etc	Nil	Nil	Nil	*	*	1 cps per 20 m ² gfa 1 cps per 4 seats & 1 cps per 5 m ² of waiting area.	Where large scale development or re- development is proposed within this zone, the Council will require the provision of 10% landscaping and observance of setbacks as may be determined by Council in each case.
Offices, Consulting Rooms, Medical Clinics etc.	*	*	*	*	*	1 cps per 50m ² gfa 4 cps per consultant or practitioner	Where loading and unloading of goods is required to service the particular use, such facilities will be required to be provided within the site to the satisfaction of the Council.
Day Care Centre, Kindergarten	*	*	*	*	*	1 cps per staff member	Additional provision for picking up and setting down of children, etc., may be required.
Churches, Public Halls, etc	*	*	*	*	*	1 cps per 4 seats	
Showrooms, Warehouse, Storage etc.	7.5	5	*	75	10	1 cps per 100m ² gfa + servicing	For bowsers, awnings and canopies on service stations, petrol filling stations, setbacks may be reduced at the discretion of the Council.
Hotel, Motel	7.5	*	*	75	10	1 cps per 3 m ² net bar area and/or 1 cps per 4 seats of dining area + 1.5 cps per unit of accommodation as appropriate.	Servicing facilities will also be required.
Tavern	*	*	*	*	*	1 cps per 3m ² net bar area and/or 1 cps per 4 seats of dining area.	
Wine Shop, Liquor Store	*	*	*	*	*	See standards for shops above	

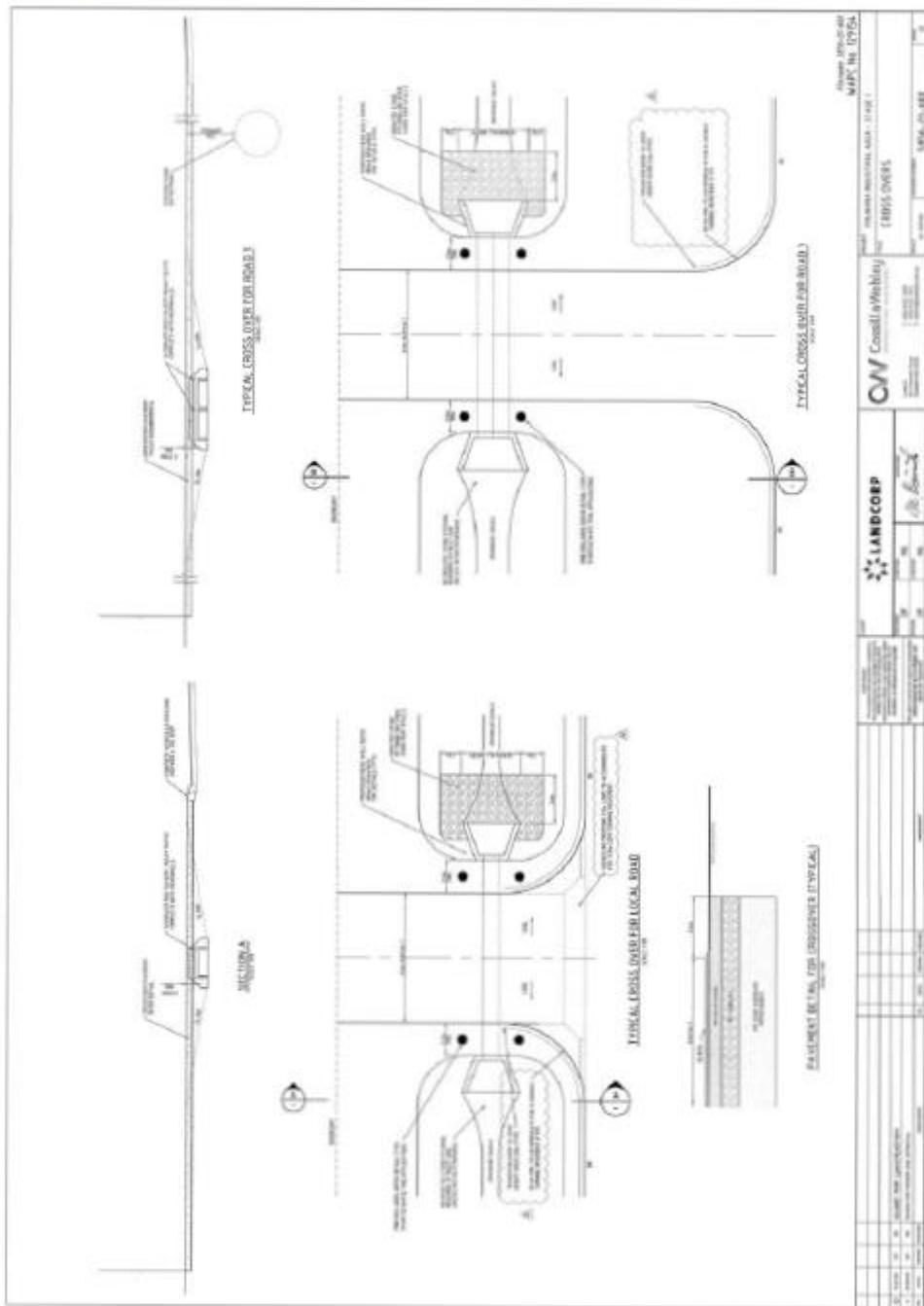
Non-Residential Development Standards cont'd

USE/ DEVELOPMENT	SETBACKS			SITE COVERAGE	LANDS- CAPING	CAR PARKING REQUIREMENTS	SPECIAL REMARKS
	FRONT	SIDE	REAR				
Caravan Park, Chalet Park, Camping Site	9	*	*	*	*	1 cps per unit, bay or site + 1 cps per 4 such units bays or sites for visitor parking.	In addition, the provisions of the Health Act (Caravan Parks and Camping Regulations 1974) shall apply.
Private Club	9	3	7.5	30	20	*	Membership, frequency of use and maximum attendance at functions etc will be used to determine parking requirements.
Institution	*	*	*	*	*	*	
Light, General and Service Industry	10	5	*	75	10	1 cps per 50m ² + servicing facilities	Where the Council is satisfied that the prescribed parking, servicing and landscaping can be provided without strict compliance with the setback requirements, the Council may relax those requirements.
Factory Units	*	*	*	*	*	1 cps per 40m ² + servicing facilities.	As above. Car parking spaces may be provided in a single parking area but the Council may require a servicing to be provided to each factory unit.
Motor Vehicle Wrecking	10	*	*	*	*	*	Storage height limited to 2 metres. Screen (solid) fencing and landscaping to be provided around open storage areas.
Veterinary Clinics & Establishments	10	*	*	*	*	4 cps per veterinarian or consultant.	
Stables	10	*	*	*	*	Nil	Council may impose appropriate building setback distances for stables & yards when development adjoins Residential or Residential Development Zoned land.

APPENDIX 3

Cossill and Webley Consulting Engineers

Drawing No. 5856-01-600



APPENDIX 4

Western Power Standard Easement Conditions

See overleaf



STANDARD EASEMENT CONDITIONS
66, 132, 220 & 330kV OVERHEAD TRANSMISSION LINES
Energy Operators (Powers) Act 1979

The Grantor COVENANTS with Electricity Networks Corporation not to:

- a) alter or disturb the present grades and contours of the surface of the land within the Easement except:
 - (i) in the course of normal farming operations; or
 - (ii) otherwise with the prior written consent of Electricity Networks Corporation on each occasion.
- b) construct, erect or set up any building, structure or improvement within the Easement other than:
 - (i) a fence or trellis not exceeding two (2) metres in height from the natural surface of the Land, earthed to the satisfaction of Electricity Networks Corporation in the case of a metallic fence or trellis; and
 - (ii) those structures and improvements specified in and to the extent permitted by subclause (c).
- c) construct, erect, set up, improve, enlarge or alter any:
 - (i) contour bank;
 - (ii) fenced stormwater drain or compensating basin; or
 - (iii) fenced artificial lake;

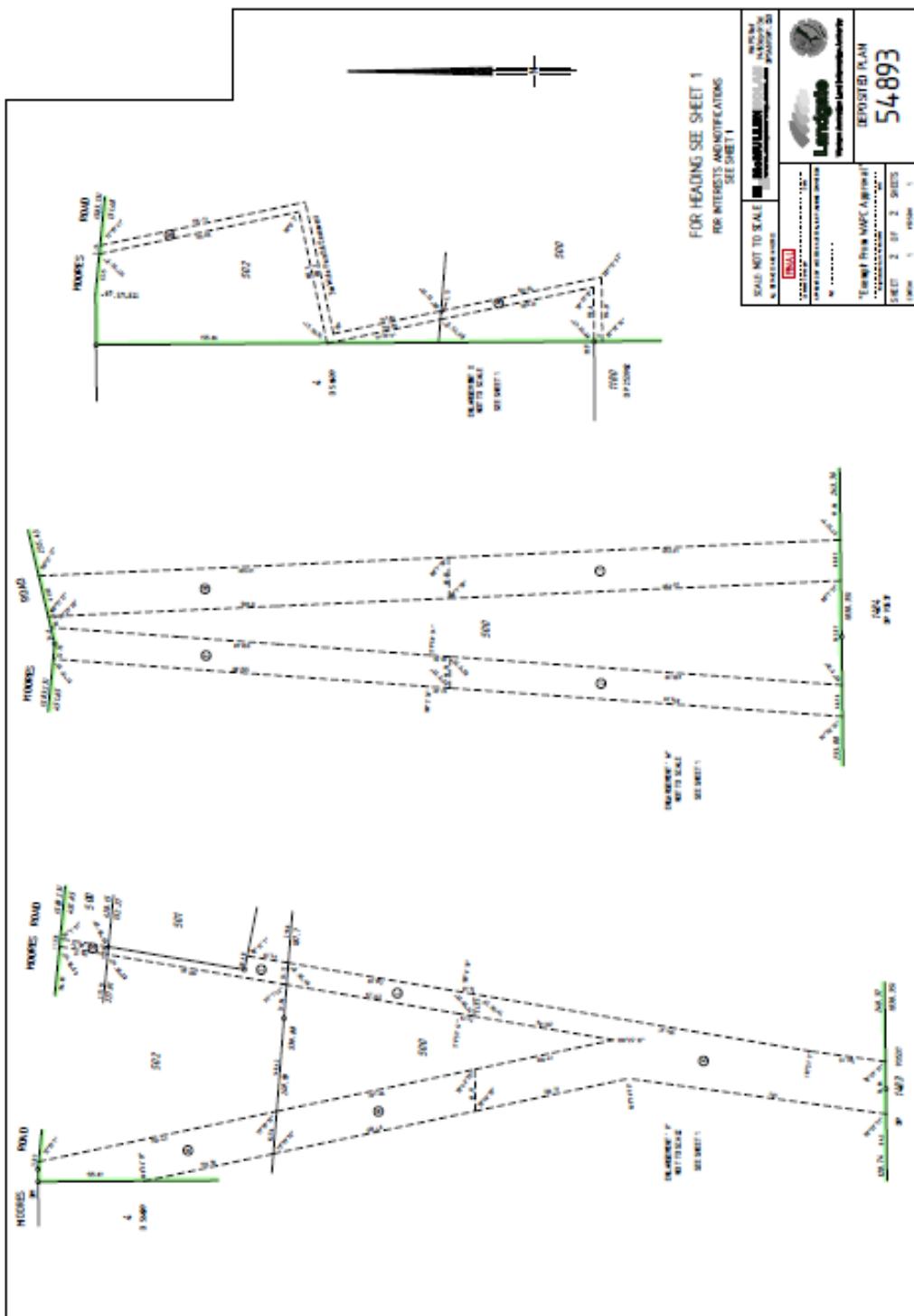
within the Easement without prior written consent of Electricity Networks Corporation, which Western Power Corporation shall be under no obligation to grant and then upon those terms and conditions, if any, which Western Power Corporation may determine;
- d) grow, cultivate or maintain any vegetation exceeding one (1) metre in height from the natural surface of the land within the Easement;
- e) stack, place or store any plant or material within the Easement;
- f) bring within the easement any vehicle or machinery which together with any attachment, aerial or accessory exceeds 4.5 metres in height from the natural surface of the land;
- g) park or leave stationary within the Easement any vehicle or machinery exceeding 2.5 metres in height from the natural surface of the land;
- h) bring onto or permit to be brought onto the Easement any explosive, flammable or unstable substance or material other than agricultural crops;
- i) blast or permit any blasting within the Easement;
- j) carry on or permit to be carried on any activity or operation which endangers the safety of the Transmission Works or the safe, efficient and continuous operation of those Works.

APPENDIX 5

Deposited Plan 54893

APPENDIX 5

Deposited Plan 54893





WESTERN AUSTRALIAN LAND AUTHORITY
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WESTERN AUSTRALIA 6000
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www.landcorp.com.au

Administration

Directorate	Officer Title		
Planning and Sustainability	Director Planning and Sustainability		
Version	Decision to Advertise	Decision to Adopt/Amend	Current Status
1	OCM08/055 – 27/3/2008	OCM08/103 – 29/5/2008	Adopted

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