



Forrestdale Project Area Design Guidelines

September 2019

The MRA acknowledges the traditional owners of the land within its redevelopment areas.

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Figure 1: Aerial view of Forrestdale Project Area



Chapter 1 Introduction

1.1 THE PURPOSE OF THE DOCUMENT

The Forrestdale Project Area Design Guidelines (the Design Guidelines) are intended to guide development within the Forrestdale Project Area (the Project Area) in accordance with the vision and objectives of the Armadale Redevelopment Scheme 2 (Scheme 2).

The Design Guidelines require subdivision and development proposals within the Project Area to deliver high quality design outcomes, while complementing the region's environmental and cultural assets to facilitate the desired vision for each of the Project Area's four Precincts.

The Design Guidelines establish design objectives and development standards for subdivision and built form within the Project Area. In addition, the Design Guidelines provide a comprehensive basis for the control of development and subdivision in the Project Area.





1.2 THE METROPOLITAN REDEVELOPMENT AUTHORITY OBJECTIVES

The role of the Metropolitan Redevelopment Authority (the Authority) is to revitalise and transform underutilised urban areas into diverse and activated places for people to live, work and recreate. The Authority is committed to Place Making – a powerful framework for urban regeneration, sustainable development, investment attraction, land use and celebrating local diversity, heritage and culture. Redevelopment in all of the Authority’s project areas is guided by the following objectives, as set out in the *Metropolitan Redevelopment Authority Regulations 2011*:

- To build a **sense of place** by supporting high-quality urban design, heritage protection, public art and cultural activities that respond to Perth’s environment, climate and lifestyle;
- To promote **economic wellbeing** by supporting, where appropriate, development that facilitates investment and provides opportunity for local businesses and emerging industries to satisfy market demand;
- To promote **urban efficiency** through infrastructure and buildings, the mix of land use and facilitating a critical mass of population and employment;
- To enhance **connectivity** and reduce the need to travel by supporting development aimed at well-designed places that support walking, cycling and public transit;
- To promote **social inclusion** by encouraging, where appropriate, a diverse range of housing and by supporting community infrastructure and activities and opportunities for visitors and residents to socialise; and
- To enhance **environmental integrity** by encouraging ecologically sustainable design, resource efficiency, recycling, renewable energy and protection of the local ecology.

1.3 USING THE DESIGN GUIDELINES

The Design Guidelines have been prepared and adopted in accordance with the requirements of Scheme 2. The Design Guidelines provide a flexible, objective based approach to delivering high quality developments that meet the Authority’s objectives. The Design Guidelines promote early engagement with the Authority and set out the requirements for development and subdivision proposals.

1.3.1 STRUCTURE

The Design Guidelines are structured in the following manner:

- Subdivision Design Guidelines in chapter 2 provide guidance for subdivisions within the Project Area and is to be read in conjunction with the *State Planning Policy 4.1 State Industrial Buffer Policy* (SPP 4.1) and relevant Development Control Policies.



- Common Design Guidelines in chapters 3 and 4 provide generic guidelines that apply to the entire Project Area.

The Design Guidelines are comprised of the following:

- OBJECTIVES

The Objective outlines the intended outcome for each provision. It is mandatory to achieve the objectives. The Authority will give due regard to the achievement of the design objective in determining development applications or making any other discretionary decisions under the Design Guidelines and Scheme 2.

- AUTHORITY DEVELOPMENT POLICY

If an Authority Development Policy is applicable to the design objective, it will be identified in the development standards. It is mandatory to comply with the provisions of Development Policies.

- ACCEPTABLE OUTCOMES

The Acceptable Outcomes establish specific measures and outcomes, which will assist with ensuring the specific objectives are met. However, there may be alternative solutions to demonstrate consistency with the objectives. These will be considered on a case-by-case basis, having regard to clause 1.5 of the Design Guidelines.

- APPLICATION PROCESS

Where additional submission requirements or processes apply, or separate approvals from other agencies are required, these processes will be identified.

- FIGURES AND IMAGES

Figures and images have been included to illustrate design responses to Development Standards:

- Plans - Identify Project Area and Precinct boundaries;
- Diagrams - Provide specific design criteria that visually represent potential solutions to site provisions; and
- Photographs and Illustrations - These are for illustrative purposes only and may include some elements of variations to the development standards. This does not imply that the Authority will accept the same outcome in all cases as context may vary.





1.4 APPLICATION OF REDEVELOPMENT SCHEME AND DEVELOPMENT POLICIES

The Design Guidelines are to be read in conjunction with Scheme 2 and Development Policies, as well as the National Construction Code of Australia (NCCA), *Disability Discrimination Act 1992* and all relevant legislation and Australian Standards.

The Scheme 2 and the Armadale Redevelopment Area Development Policies are available on the Authority's website.

1.5 DISCRETIONARY CLAUSE

An important provision within the Design Guidelines is the opportunity for the development applicant to meet the Acceptable Outcomes through an alternative solution.

The Authority may approve a development application or endorse a subdivision application where the applicant has departed from the Acceptable Outcomes where, in the Authority's opinion, it is demonstrated that the alternative solution(s):

- a) is consistent with clause 5.19 Determination When Non-Compliant, of the Scheme 2; and
- b) meets the relevant Objective(s) of the Design Guidelines.



Each application will be assessed on its own merits, having regard to the matters above and clause 5.18 of Scheme 2. The approval or endorsement of an alternative solution will not set a precedent for other development or subdivision applications elsewhere in the Scheme 2 Area. A provision within the Design Guidelines is the opportunity for the applicant(s) or owner(s) to meet the Objective through an alternative solution.

1.6 APPLICATION PROCESS

The Authority's review, assessment and determination process for development applications enables the efficient and effective processing of applications while ensuring developments achieve the required high quality urban architectural and built form outcomes. This assessment takes into consideration leading edge sustainability, activation and accessibility standards as well as considering the way a development functions, fits its purpose and how it responds to the context in which it is located.



'Major' Development Applications (as defined by regulation 15(2) of the *Metropolitan Redevelopment Authority Regulations 2011*), or applications considered by the Authority to be significant, will be subject to a review process involving the Authority's Design Review Panel. The Design Review Panel will provide advice to the Authority on design related matters, including the architectural merit of the proposal.

Table 1 outlines the design formulation, submission and approval process required for development within the site.





Table 1: Development Application Process

Pre Development Application Submission	Development Application	Documentation	Construction
Step 1. The applicant and their project team meet with the Authority to discuss design and sustainability concepts.	Step 5. The applicant lodges a development application with the Authority, addressing the objectives and applicable specific elements of the Design Guidelines.	Step 8. The applicant lodges working drawings to the Authority demonstrating compliance with the development approval (plans and conditions).	Step 13. The applicant undertakes construction.
Step 2. The applicant provides the Authority with indicative plans.	Step 6. The Authority refers the development application to the City of Armadale and other agencies as necessary. The Authority obtains the advice of its appointed Design Review Panel as required within the same period.	Step 9. The Authority refers the working drawings to agencies or consultants as required to verify compliance with the development approval (plans and conditions).	Step 14. Ongoing monitoring and building management to ensure compliance with the development approval.
Step 3. The Authority undertakes preliminary assessment and obtains preliminary advice from the City of Armadale and its appointed Design Review Panel, where required.	Step 7. The Authority assesses and determines the application, having regard to the advice received from referral agencies and the Design Review Panel, if applicable.	Step 10. The Authority assesses and certifies that the working drawings are compliant and refers its advice to the City of Armadale.	
Step 4. The Authority provides the applicant with focused feedback.		Step 11. Developers lodge a Building Permit application with the City of Armadale.	
		Step 12. City of Armadale issues a Building Permit.	



1.7 THE FORRESTDALE PROJECT AREA VISION

The Authority's vision for the redevelopment of the Project Area is to establish an industrial centre to cater for a range of manufacturing, processing, warehouse and bulky goods handling activities.

1.7.1 PRECINCT 7 – FORRESTDALE BUSINESS PARK EAST LIGHT INDUSTRY

Precinct 7 – Forrestdale Business Park East Light Industry has high exposure and access to the existing and proposed regional road network and will be the focus of new economic activity and employment in the region. The location of land uses will have regard to existing and future neighbouring residential development and environmentally sensitive areas. The land uses will not adversely impact the safety and visual amenity of existing residential development. Non-production based land uses of a service nature will be provided along the boundary roads, acting as a buffer between more intense industrial land uses and adjacent residential development while ensuring uses do not compete with or undermine the viability of established Activity Centres within the locality. Integrated landscaping and street tree planting will be utilised to soften the streetscape and assist with the seamless transition between industrial development and the neighbouring residential areas.

1.7.2 PRECINCT 7A – FORRESTDALE BUSINESS PARK EAST INDUSTRY

Precinct 7A – Forrestdale Business Park East Industry will support a range of different scales of business activity, including more intrusive industrial land uses. Development will include production based land uses with a more specialised or intensive industrial nature including manufacturing, assembly, wholesale and/or distribution processes which, by nature of their operations, should be isolated from sensitive land uses.

1.7.3 PRECINCT 8 – FORRESTDALE BUSINESS PARK WEST LIGHT INDUSTRY

Precinct 8 – Forrestdale Business Park West Light Industry will accommodate a range of industrial land uses promoting synergy with existing and future development adjacent to the business park, while ensuring uses do not compromise the viability of established Activity Centres within the locality. The location of land uses will have regard to existing and future neighbouring residential development and environmental sensitive areas. Less intensive land uses such as showrooms and warehousing will be developed along the Keane, Armadale and Ranford Road frontages and primary entry points, enabling greater exposure to passing trade as well as providing an appropriate buffer. Integrated landscaping and street tree planting will be utilised to soften the streetscape creating a safe, sustainable and attractive space for the community.





1.7.4 PRECINCT 8A – FORRESTDALE BUSINESS PARK WEST INDUSTRY

Precinct 8A – Forrestdale Business Park West will accommodate larger scale and more intensive industrial operations, which can be more intrusive through noise, emission or scale. The location of such land uses will respond to the scale and character of adjacent developments in order to deliver unified and functional development while promoting diversity of industrial land uses within the business park. Larger scale industrial development that requires heavy haulage vehicle access will have easy access to the primary internal roads enroute to the regional road network.

1.8 HISTORY

The Whadjuk Noongar Aboriginal people occupied the land in what is now the Perth metropolitan region for approximately 45,000 years before it was colonised by European settlers. The region that later encompassed Armadale was valued by the Whadjuk Noongar people for its natural environmental diversity that offered important seasonal shelter and water sources.

The area around Forrestdale Lake (formerly known as Jandakot Lake) in particular was a special place for Aboriginal people who camped around its shores and hunted for the plentiful food available in and around the waters: long-necked turtles, waterfowl, gilgies, possums and many other animals. Still today, Lake Forrestdale is the largest in Perth's south metropolitan region and remains a wetland of national importance.

Forrestdale was first settled by Europeans in 1885 and called East Jandakot. The area mainly developed as an agricultural district, with the early settlers clearing the land for growing crops and running dairy and poultry farms. Because of the significant wetland environment, drainage was always a major issue for primary producers and East Jandakot established its own Drainage Board.

From the 1900s, as more services and facilities were provided, the settlement around Forrestdale began to knit itself into a close community. In 1907 the Armadale to Fremantle train service commenced, which was fundamental in the growth and expansion of East Jandakot. The small townsite now boasted a Railway Station as well as a Post Office. A hall (later called the Forrestdale Hall or Settlers Hall) was also built in 1914 and used as a school and for church services. The East Jandakot Progress Association formed in the same year. In 1915 the East Jandakot townsite was renamed Forrestdale.

In the 1920s, the next wave of improved services was introduced to the area, securing and stimulating growth. In 1923, Forrestdale was brought under the Armadale/Kelmscott Road Board, substantially increasing the local government area, and by 1930 the population was approximately 2000 people. In the 1950s, Forrestdale residences were connected to electric power.

Haydock's Place, located within the Project Area, is the oldest remaining residence in Forrestdale. Haydock's Place was built in approximately 1900 by Auguste Moernich to provide a residence for a dairy farm on the lot. Henry Haydock owned and operated the dairy farm until 1939. In later years, Jack Haydock, son of Henry, applied for a licence to use the site as a piggery. The place represents an early development within the Forrestdale area, in what was formerly the Jandakot agricultural area, with it being the only remaining example of an early twentieth century agricultural homestead within the Project Area.



Chapter 2 Subdivision Design



Detailed planning through the preparation of subdivisions will result in the delivery of industrial development being seamlessly connected to neighbouring precincts through the provision of efficient movement networks and an appropriate industrial interface.

The process will assist in protecting the Project Area's natural and historical assets while ensuring development is appropriately integrated, for the benefit of future generations. The Authority promotes the responsible and sustainable development of land within the Project Area.

Subdivisions for privately owned land are determined by the Western Australian Planning Commission (WAPC) in consultation with the Authority.

2.1 LOT AREA AND SUBDIVISION DESIGN

Objective

Subdivisions are designed to promote development in accordance with the Character statement for the relevant precinct, as detailed under section 1.7 of the Design Guidelines. The layout of subdivision proposals will enhance local identity by responding to the site context, site characteristics, setting and landmarks and incorporate key elements of natural and cultural heritage significance.

Subdivisions will support a range of lot sizes suitable for a variety of industrial land use types and meet the diverse and changing needs of businesses and the community. Industrial lots will be of an appropriate size and design to accommodate built form, access, parking and servicing requirements of the intended land use in a manner that contributes to a high quality development outcome.

In this regard, all subdivision applications are to have due regard to the principles and requirements of SPP 4.1 and Development Control Policy 4.1 Industrial Subdivision.

Acceptable Outcomes

- The design and construction of a subdivision shall be consistent with any approved structure plan.
- Subdivision shall contribute to the conservation and preservation of cultural heritage places, identified in the Armadale Redevelopment Area Heritage Inventory and approved structure plan(s).
- Subdivision design shall seek to separate zoning by way of a road or subdivision lot boundary. And
- Minimum lot sizes shall be 2000m² to ensure sufficient space is available to accommodate the industrial operations and buildings envisaged, enable possible future expansion and allow the site to function properly and efficiently in terms of safe ingress and egress, vehicular movement, parking, deliveries, storage, bin areas and landscaping.



2.2 ROAD DESIGN

Objective

Subdivisions will provide a functional, legible street network, which supports the development of a cohesive environment designed to foster a high level of connectivity that is safe, responsive and appropriate to its function. The road network will be designed to ensure safe and efficient movement of traffic to and from each site within the Project Area.

Acceptable Outcomes

- Subdivision of lots adjoining major roads shall be designed to achieve access via a side street, service road or coordinated reciprocal access way to promote efficient and safe traffic management.
- Subdivision roads and intersections shall be designed to accommodate restricted access vehicles (Category 4) (RAV4).
- Subdivision roads shall incorporate a minimum 10 metre carriageway within a 20 metre reserve or a 30 metre reserve where drainage swales are included.
- A 2.5 metre dual use path shall be provided on at least one side of all subdivision roads to connect seamlessly with adjoining development (refer to Appendix 2). And
- Landscaping of the road reserve shall be installed and maintained in accordance with sections 2.3 and 2.4 of the Design Guidelines.

Note: Major Roads include Alex Wood Drive, Allen Road, Anstey Road, Armadale Road, Keane Road, Ranford Road and Remisko Drive. Road reservation width and requirements for road designs are subject to final approval by Main Roads Western Australia and/or the City of Armadale.

2.3 STREETSCAPES

Objective

The delivery of a cohesive and seamlessly integrated network of streets with high quality and sustainable landscaping treatments will contribute to a sense of place and create a safe and attractive environment.

Landscaping will assist in mitigating bulk and scale of buildings, reduce urban heat and create an attractive delineation between the public and private realm. Landscape design will be environmentally sustainable and designed to assist microclimate management and to conserve water through the incorporation of Water Sensitive Urban Design (WSUD) principles and the use of drought tolerant plants and water sensitive irrigation designs.





Acceptable Outcomes

- Streets shall be designed to promote safe and efficient pedestrian and cyclist circulation, manage vehicle movements and accommodate lighting, landscaping and at-source stormwater management systems.
- A minimum clearance of one metre shall be provided between a crossover and a verge tree to allow for root and canopy growth and safety of road users.
- Retaining walls and associated fill within one metre of any property boundary shall be no greater than 0.5 metres above the corresponding natural ground level. Built form and finish floor level must respond to the natural topography of the site.
- Public lighting shall be designed in accordance with Australian Standards (AS/NZS 115.6 – Lighting for Roads and Public Spaces, as amended) and should be provided to adequately illuminate streets and footpaths in accordance with Western Power's design catalogue.
- Street verges shall be of sufficient width to contain all the anticipated services, including the provision for street lighting, large canopy street trees of appropriate species and where appropriate, embayed car parking, landscaping and footpaths.
- Street verges shall be of a sufficient width to cater for appropriate integration of transformers with surrounding finished levels.
- A detailed landscaping plan shall be prepared to establish a landscaping theme for the subdivision area, reinforcing the identity of the Project Area while assisting with the creation of an attractive urban edge with landscaping on the verge.
- The principles of Crime Prevention Through Environmental Design (CPTED) shall be incorporated into the site layout and landscape design, to enhance safety and security and allow development to take advantage of views over the public realm or open space (Refer to WAPC Planning Bulletin 79 – Designing out Crime Planning Guidelines June 2006).
- Landscaping design utilises native and waterwise species and include a weather based irrigation system, which adjusts watering times based on temperature and rainfall. And
- Street trees are provided at a minimum rate of one tree for every four bays of uncovered street car parking and one tree to every 10 metres of street frontage to contribute to high quality street character and provide shade and cooling.



2.4 CONSERVATION AREA INTERFACE

Objective

Subdivisions will be designed to protect conservation areas including Bush Forever sites, Conservation Category Wetlands and protected vegetation areas from any impacts associated with adjacent development. These areas will be designed and delivered to provide formal access to public open space while promoting the integration of conservation and water sensitive urban design principles.

Acceptable Outcomes

- Conservation areas shall incorporate open space providing formal access to nature and enhancing recreational amenity for employees while supporting drainage management.
- Lots with a common boundary with any conservation area shall provide a hard edge and fencing as the interface between development and conservation areas.
- The hard edge interface to any designated conservation areas shall be a road reservation as a minimum.
- Drainage of 10% annual exceedance probability (AEP) shall be designed for within the development lot and not within any conservation area. And
- Conservation areas shall not be used to mitigate against bushfire.

2.5 UTILITIES

Objective

Development within the Project Area will be provided with essential services delivered in a timely, cost effective, coordinated, efficient and aesthetically appropriate manner that supports sustainable practices.

Acceptable Outcomes

- Utilities and servicing infrastructure shall be designed and installed to respond to the site context and characteristics, setting and landmarks and incorporate key elements of natural and cultural significance. Servicing routes shall be selected to minimise negative impacts on the environmental and visual amenity of the locality.
- All lots shall be provided with underground power, connected to a reticulated sewerage and reticulated water system.
- Where lots are encumbered by a service easement, the easement may be used for access ways, car parking, and/or open space requirements but is not to be built upon unless a suitable design solution can be agreed with the relevant service provider and the Authority. And





- All water and sewer infrastructure is to be laid within the existing and/or proposed road reserves, on the correct alignment and in accordance with the Utility Providers' Code of Practice.

2.6 INFRASTRUCTURE CORRIDORS

Objective

Development within the Project Area will be designed and constructed to protect the Forrestdale Main Drain, Westfield Wastewater Transfer Station buffer, Dampier Bunbury Natural Gas Pipeline Corridor, Western Power easements and other Infrastructure Corridors identified by any relevant agency.

Acceptable Outcomes

- Subdivision design shall identify and protect all infrastructure corridors and be based upon suitable risk assessments undertaken in accordance with the relevant Australian Standards as may be required by the Authority and relevant service provider.
- A notification on title may be recommended by the Authority on a subdivision application advising of the existence of a hazard or other factor. And
- Development shall not be located within any infrastructure corridors without approval from the Authority and relevant service provider.

2.7 STORMWATER MANAGEMENT

Objective

All development within the Project Area will be designed in accordance with current best management practice and Water Sensitive Urban Design (WSUD) principles.

An Urban Water Management Plan (UWMP) shall be prepared in accordance with the WAPC's Better Urban Water Management Guidelines (2008) and be compliant with the provisions of the State Planning Policy 2.9 - Water Resources, for all subdivision proposals, and development applications where no subdivision has occurred.

Stormwater should be managed in accordance with the Department of Water and Environmental Regulation's Stormwater Management Manual for Western Australia and Decision Process for Stormwater Management in WA, the Department of Biodiversity, Conservation and Attractions' Policy 49 — Planning for Stormwater Management Affecting the Swan Canning Development Control Area, and water sensitive urban design principles.



Acceptable Outcome

- UWMPs shall be prepared generally in accordance with an approved Local Water Management Strategy (LWMS) and shall address the following:
 - how the final urban form will use and manage water including specific infrastructure, land requirements and detailed design of water management such as stormwater management and treatment;
 - detail of the design, construction and implementation and shall state what will be done, when and by whom; and
 - management of stormwater run-off including the incorporation of progressive treatments (i.e. at source) utilising subsoil drains for stormwater infiltration.
- Biofilters and swales shall be used to treat and reduce flow rates of stormwater. These areas shall be delivered in accordance with the Monash University Vegetation Guidelines for Stormwater Biofilter in the South-West of Western Australian and City of Armadale specifications. And
- All development will be designed and undertaken to minimise the extent of fill on site.

2.8 BUSHFIRE MITIGATION

Objective

Development will demonstrate effective, risk-based land use planning to minimise the occurrence and impact of bushfires on people, buildings, infrastructure and the environment.

All subdivisions shall comply with the provisions of the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) and the WAPC Guidelines for Planning in Bushfire Prone Areas.

Approval Process

- A Bushfire Hazard Level (BHL) assessment or Bushfire Attack Level (BAL) contour map is to be prepared as part of any subdivision applications for any area located within a designated Bushfire Prone Area.
- If sections of the development are identified as BHL moderate or extreme (if a BHL assessment is prepared), or BAL-12.5 or above (if a BAL contour map has been prepared), then the proposal should be accompanied with a Bushfire Management Plan (BMP). And
- The BMP for a subdivision should demonstrate how the development will (when the lot layout is known) or may (when the lot layout is unknown) comply with the relevant Bushfire Protection Criteria as outlined in Appendix 4 of the Guidelines for Planning in Bushfire Prone Areas. Further guidance on what should be included in a BMP can be found in Appendix 5 of the Guidelines for Planning in Bushfire Prone Areas.





Note: BMPs are to be prepared by an accredited Bushfire Planning Practitioner at the level appropriate to the information required. Level 2 and 3 Bushfire Planning capabilities are outlined in Section 6.14 of the Guidelines for Planning in Bushfire Prone Areas.

Chapter 3 Land Use and Design



3.1 DESIGN QUALITY

Design quality means achieving an exceptional outcome by addressing all principles of good design and going above and beyond these. Recognition of design quality is not done by checklist but through a process of evaluation and an advisory design review process with input from experienced independent professionals.

State Planning Policy 7.0: Design of the Built Environment sets out the following Design Principles to guide design, review and decision making to deliver good design outcomes:

- **Context and character** - good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.
- **Landscape quality** - good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.
- **Built form and scale** - good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.
- **Functionality and build quality** - good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.
- **Sustainability** - good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.
- **Amenity** - good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.
- **Legibility** - good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.
- **Safety** - good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.
- **Community** - good design responds to local community needs as well as the wider social context, providing buildings and spaces that support a diverse range of people and facilitate social interaction.
- **Aesthetics** - good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.



Objective

All development in the Project Area will demonstrate design quality across all aspects of the built environment including places, spaces and environment, creating highly valued and responsive development outcomes. The needs of workers and visitors are met and exceeded in innovative ways that contribute positively towards the creation of a sense of place.

3.2 LAND USE

3.2.1 LIGHT INDUSTRY PRECINCTS

Objective

Light Industry will accommodate less intensive industrial land uses developed along major roads and primary entry points enabling greater exposure to passing trade and providing a buffer between the Industry Precinct and neighbouring residential development and environmentally sensitive areas. Uses located within Light Industry Precincts will not compete with or undermine the viability of established Activity Centres within the locality. Non-industrial uses are not supported within the Project Area except where they are incidental to the primary industrial use on a site.

In this regard, development shall comply with the land use precincts identified in the Forrestdale Project Area Land Use Map (refer to Appendix 1). Consistent with clause 6.4(3) of the Scheme 2, where there is any inconsistency with the land use map included in the Design Guidelines and the Scheme 2 and by extension, the approved Forrestdale Business Park East Structure Plan or Forrestdale Business Park West Structure Plan, the Design Guidelines will prevail.

3.2.2 GENERAL INDUSTRY PRECINCTS

Objective

General Industry will accommodate larger scale, more intensive industrial operations which can be more intrusive by virtue of the scale of development or operational impacts such as noise emissions. These uses will be located away from existing and future sensitive areas adjacent to the Project Area.

In this regard, development shall comply with the land use precincts identified in the Forrestdale Project Area Land Use Map (refer to Appendix 1). Consistent with clause 6.4(3) of the Scheme, where there is any inconsistency with the land use map included in the Design Guidelines and the Scheme and by extension, the approved Forrestdale Business Park East Structure Plan or Forrestdale Business Park West Structure Plan, the Design Guidelines will prevail.



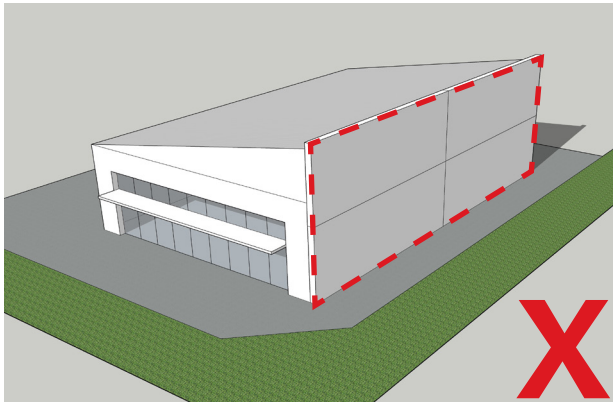
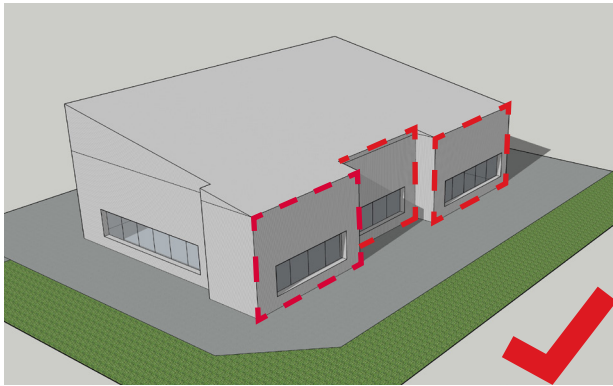


Figure 2: Articulation Elements facing secondary street

3.3 SETBACKS, ARTICULATION AND BUILDING LAYOUT

Objective

Development within the Project Area will present varied, appropriately scaled and balanced elevations to adjoining streets and public spaces. Façades will demonstrate a considered approach to material selection and application that balances consistency and variety, creating an aesthetic that complements the existing streetscape and natural environment. Building location and orientation on site will contribute to an attractive streetscape, facilitate passive surveillance and maximise access to natural light and ventilation for internal areas. Building dimensions and design will minimise the perception of building bulk and create pedestrian scaled elements in high activity areas.

Acceptable Outcomes

- Development is to comply with the following standards:
 - a maximum height of 4 storeys up to 17 metres from natural ground level;
 - achieve a minimum site cover of 20% of the lot area;
 - provide a minimum setback of 15 metres from the primary street frontage, up to a maximum of 21 metres; and
 - provide a minimum setback of 6 metres from the secondary street, if applicable.
- The street setback area is only be used for landscaping, vehicular access, and parking and not for the parking of vehicles, which are being wrecked, repaired or stored, or for the storage of any materials.
- Buildings shall respond to the alignment of the lot boundaries. Where lots have non-rectangular shapes, alignment with the street frontage is the priority.
- Development of two or more buildings or structures on a site shall create a cohesive, well-coordinated and complementary development of similar construction quality.
- Building massing shall complement adjacent development to create a cohesive streetscape.
- Portions of buildings that are visible from the street shall be designed to a human scale and visual interest such as:
 - variation in wall plane through the setting back of upper portions of walls or breaking up the length of the wall vertically;
 - smaller scale design elements and features adjoining the exterior walls are encouraged to create human scale; and
 - building materials that express a small-scale module shall be provided particularly around any activated land uses and entrances to assist in breaking down the perceived mass of large wall planes.



- Pedestrian entrances shall be covered to provide weather protection, and include well placed windows to enhance passive surveillance from within the development.
- Any activated customer based land uses shall be set forward of the main building alignment. If all uses are integrated in one building, street frontages shall be broken up by varying wall planes, heights and material application.
- All buildings shall be designed to incorporate CPTED principles to ensure surveillance of the street and public realm.
- Large expanses of blank wall facing street frontages, public space or reserves shall be avoided.
- All walls, including boundary walls shall be finished to the same quality and standard as the primary façades.
- Buildings shall utilise materials that are durable and low maintenance. The use of recycled and/or locally sourced materials is strongly encouraged by the Authority.
- Buildings shall utilise appropriate contrasting materials and finishes that contribute positively to the Project Area and are to be non-reflective to reduce traffic hazards. And
- All developments shall maximise access to natural light and ventilation by incorporating windows, skylights and air vents in appropriate locations. The placement of shade structures on the building is encouraged to assist in limiting overheating in summer and adding visual interest to the façade.

3.4 SIGNAGE

Objective

Well located and integrated signage will be provided to assist with wayfinding and identification of activities and businesses within the Project Area and will not visually dominate the building or streetscape. Signage will not restrict sightlines and views or lead to a reduction in the extent or delivery of tree canopies.

Authority Policy

Refer to the Authority's Development Policy 6 - Signage.

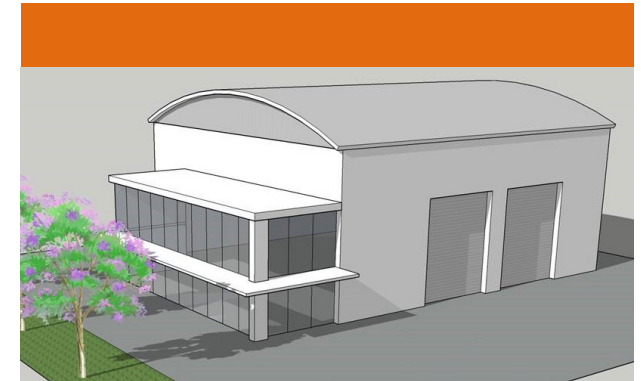


Figure 3: Building Layout and Massing Concept



Figure 4: Building Layout and Openings Concept

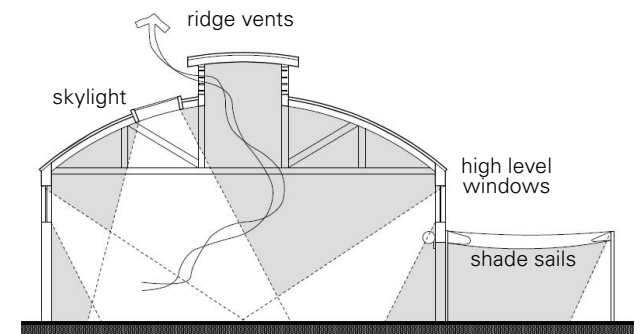


Figure 5: Natural Light, Ventilation and Shading



Acceptable Outcomes

- Compliance with the Authority's Development Policy 6 – Signage and the following specific criteria outlined in Table 2.

Table 2: Signage Specific Criteria

Sign Type	
Wall Signage	<ul style="list-style-type: none">• A wall sign or combination of wall signs shall not exceed 35% of the total area of the wall to which it is affixed.
Pole, Pylon or Billboard sign	<ul style="list-style-type: none">• Maximum height of 8m measured from ground level;• Total area of each sign face should not exceed 10m²;• Two (2) Pylon signs may be considered where the lot frontage exceeds 40m; and• May be internally illuminated.

3.5 FENCING

Objective

Delineation between the public and private realm is achieved primarily through the use of built form, changes in ground level and landscaping. Fencing will be designed to maintain passive surveillance of the public realm and promote a safe, attractive and coordinated streetscape.

Authority Policy

Refer to the Authority's Development Policy 5 – Additional Structures.

Acceptable Outcomes

- Fencing within the street setback area shall be no higher than 1.8 metres above the corresponding natural ground level of the adjacent footpath or road and shall be powder coated garrison style fencing or a similar high quality open fencing.
- Lots located along major roads shall have no fencing installed forward of the building line. And
- Fencing behind the building line, may consist of alternative fencing materials.

Note: Major Roads include Alex Wood Drive, Allen Road, Anstey Road, Armadale Road, Keane Road, Ranford Road and Remisko Drive.



3.6 LIGHTING

Objective

The provision of outdoor lighting will enhance the safety and security for users whilst minimising light spill impacts on adjoining properties and glare on road traffic. Lighting will provide a legible, well-lit environment and will highlight architectural features to provide visual interest.

Acceptable Outcomes

- Lighting shall illuminate entrances of development, adjoining streets and public spaces to create safe, secure and well-lit environments with minimal glare and avoidance of light spill.
- Lighting shall be integrated into the built form to highlight architectural features, landscaping, main entrances and the corners of buildings.
- Lighting shall be provided to illuminate key pedestrian areas. And
- The use of smart lighting to reduce energy and light pollution is encouraged.

3.7 LANDSCAPE DESIGN

Objective

Landscaping will be designed to contribute to the character and visual amenity of a space by providing shade and shelter, softening bulk and scale of buildings, creating an attractive delineation between the development and public realm and reducing water use and ambient temperatures in the area.

Landscaping will be designed in accordance with best practice WSUD principles and the Water Corporation's Waterwise Criteria for landscaping, including incorporation of drought tolerant plants and irrigation designs that assist microclimate management and water conserve conservation.

Acceptable Outcomes

- A minimum landscaping zone of three metres is provided along all street frontages and receive a minimum of 50% understorey planting coverage and 50% unplanted mulch area utilising native and waterwise species.
- Maintain a high quality landscaped interface between the lot boundary and the adjacent road carriageway.





- A minimum of one 45 litre tree shall be provided for every 10 metres of street frontage, to all street frontages as well as a minimum of one 45 litre tree for every four parking bays within the lot, to contribute to a high quality street character and provide shade and cooling.
- Trees shall be set back a minimum of one metre from crossovers to maintain sightlines.
- Trees located within one metre of services shall include root barriers.
- At intersections, between mulched areas, paving areas or turf areas, edging shall be used to aid maintenance.
- Landscaped areas shall be irrigated with a fit-for-purpose water source (e.g. rainwater reuse and/or waste water recycling). If bore water is proposed it must be justified with a stormwater capture and infiltration plan capable of demonstrating on-going sustainability.
- All development will be designed and undertaken to minimise the extent of fill and retaining walls on site.
- Provide pervious pavements and garden strips that assist with progressive treatment (i.e at-source) of stormwater run-off for use in conjunction with subsoil drains.
- Rainwater from driveways and parking areas shall be directed towards landscaped areas. And
- All landscaping shall be undertaken in accordance with an approved Stormwater Management Plan.

Landscaping Plan Submission Requirements

A landscape plan shall be submitted as a part of the development application demonstrating compliance with the above Objective.

3.8 ENVIRONMENTAL SUSTAINABILITY

Objective

Sustainable initiatives will be integrated into the design, construction and management of individual buildings and the public realm to limit the environmental impact within the Project Area. Development will ensure resource efficiency, sensible use of materials and colours and the reduction in potable water consumption, use of non-renewable resources and the production of waste, pollution and other damaging emissions. Buildings will achieve reduced energy and water usage rates when compared to a Building Code of Australia base compliant building.

Authority Policy

Compliance with the Authority's Development Policy 1 - Green Buildings.



Acceptable Outcomes

All developments are required to comply with a 4 Star Green Star rating or Sustainable Design Assessment Report (SDAR) equivalent that addresses the following standards:

Energy Efficiency

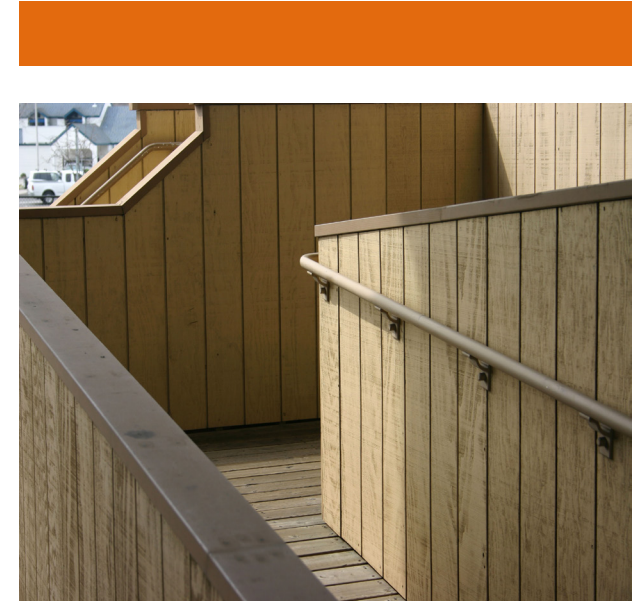
- Where air-conditioning is to be installed, it shall be located in shaded areas to reduce heat loading.
- All developments shall maximise access to natural light and ventilation by incorporating windows, skylights and air vents in appropriate locations.
- Solar or five star gas/heat pump hot water system shall be provided for all buildings that have access to gas utilities that require hot water facilities.
- Power required for instantaneous hotwater systems is to be offset by provision of solar panels. And
- The use of smart lighting to cut energy and light pollution is encouraged.

Water Efficiency

- All fittings and appliances shall have a minimum 4 Star rating in accordance with the Australian Government's Water Efficiency Labelling and Standards (WELS) scheme. And
- The use of roof space for stormwater harvesting (i.e. rainwater tanks, green roof) used for toilets, landscaped areas and/or wash down is encouraged. During prolonged or heavy rainfall events rainwater tanks should be designed to overflow into an infiltration device or landscaped areas.

Resource Efficiency

- Building design is to demonstrate the use of appropriate colours and finishes (e.g. BASIX rating for colours) of materials and/or vegetated components as part of the roof or façade to reduce the urban heat island effect, internal heat loading of buildings and glare.



3.9 UNIVERSAL ACCESS

Objective

Buildings and places will incorporate universal design principles to provide accessibility, usability, safety and equitable convenience to all people, regardless of age or ability, to utilise the amenities and services within the Project Area.



Acceptable Outcomes

- Universal access is provided in accordance with the requirements of the *Disability Discrimination Act 1992* and compliant with the Building Code of Australia (BCA) and Australian Standards (AS 1428 - Design for Access and Ability) (to the extent required by the BCA).

3.10 BUSHFIRE RISK MANAGEMENT

Objective

Development will address bushfire risk management to minimise the occurrence and impact of bushfires on people, buildings, infrastructure and the environment.

In this regard, all development shall comply with the provisions of *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) and WAPC Guidelines for Planning in Bushfire Prone Areas.

Approval Process – Development Applications

- All development applications in bushfire prone areas are to be accompanied by a BAL assessment. Where a BAL contour map has been prepared for the subject site for a previous subdivision approval, this may be used in place of a BAL assessment providing it is at a scale that is appropriate for the development and the original subdivision design has not been modified. If the BAL rating for the development site is BAL-12.5 or above, the development application is to be accompanied with a BMP. And
- The BMP is to demonstrate how the development will comply with the relevant Bushfire Protection Criteria measures as outlined in Appendix 4 of the Guidelines for Planning in Bushfire Prone Areas. Further guidance on what should be included in a BMP can be found in Appendix 5 of the Guidelines for Planning in Bushfire Prone Areas.

Note: BMP are to be prepared by an accredited Bushfire Planning Practitioner at the level appropriate to the information required. Level 2 and 3 Bushfire Planning capabilities are outlined in Section 6.14 of the WAPC Guidelines for Planning in Bushfire Prone Areas.



Chapter 4 Parking, Access and Services

4.1 SITE ACCESS

Objective

The number, size and visual impact of vehicle access points to lots will be minimised to reduce conflict between pedestrians and vehicles and to promote attractive streetscapes by maximising opportunities for landscaping. Safe and accessible pedestrian and cyclist movement will be prioritised.

Note: Vehicle access to a road under the control of Main Roads Western Australia may not be permitted. Alternative access should be considered via adjoining land or lower order road.

Acceptable Outcomes

Pedestrian Access

- Safety shall be maintained by minimising conflict points between vehicles and pedestrian/cyclist movements through careful site planning.
- Pathways from car parking areas and on-street bays to building entrances shall be well-lit, direct and convenient. And
- Clear wayfinding devices are required throughout the development with particular consideration for the needs of visitors and those with disabilities and mobility impairments.

Vehicle Access

- Lots with a street frontage of less than 50 metres shall be limited to one crossover per lot.
- Lots with a street frontage of 50 metres or more may be permitted to have two crossovers per lot.
- Developments that divide the property via strata subdivision are still subject to the crossover limitations based on the street frontage of the 'parent' lot.
- Crossovers for large vehicles shall be sized to the minimum operational width to accommodate the anticipated vehicle size and turning movements. In no case shall the crossover be wider than 9 metres.
- Crossovers on corner lots are to be located as far away as possible from the intersection, in order to protect the functional area of the intersection and reduce traffic conflict.
- Road side drainage swale crossovers shall be designed in accordance with the specifications outlined in Appendix 3.
- Appropriate processing systems or pollutant traps may be required to be installed to ensure contaminated stormwater does not enter into the district drainage system.

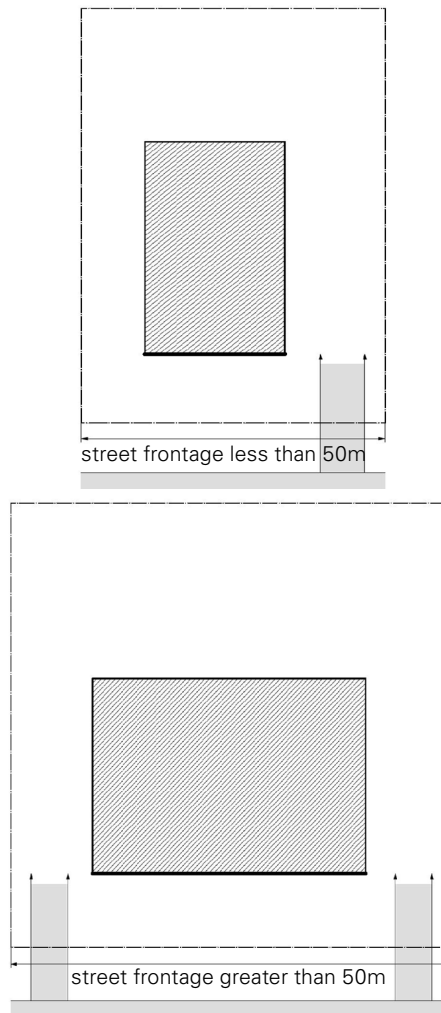


Figure 6: Crossover Design



- Hard stand areas shall be paved, kerbed and drained and could include permeable pavement.
- Vehicle access shall be designed so as not to impede pedestrian and cycle movement and provide safe and efficient access to the adjoining carriageway.
- Vehicle access and circulation shall be designed to ensure that all vehicles can leave the site in forward gear.
- Vehicle access point(s) should be carefully coordinated to avoid existing or proposed embayed on-street parking or street trees. Where removal of embayed on-street parking or street trees is unavoidable, relocation is required in consultation with the City of Armadale's Technical Services Directorate at the sole cost of the applicant.
- Loading areas, where required by the land use, shall not occur within the road reserve. Loading areas shall be located behind the street setback area, screened from public view and appropriately marked.
- Direct vehicle access may not be permitted to major arterial roads. Access shall be achieved via a side street, service road or coordinated reciprocal access way. Detailed design shall be undertaken in consultation with the City of Armadale's Technical Services Directorate. And
- An Easement in Gross or reciprocal access ways and parking areas across separate lots may be supported to minimise crossovers and maximise development potential of some sites. In such cases, an agreement between the landowner and the City of Armadale is required.

Note: All crossovers shall be designed in accordance with the City of Armadale's concrete crossover specifications or a sustainable alternative design approved by the City of Armadale. All crossovers are required to be approved by the City of Armadale prior to construction.

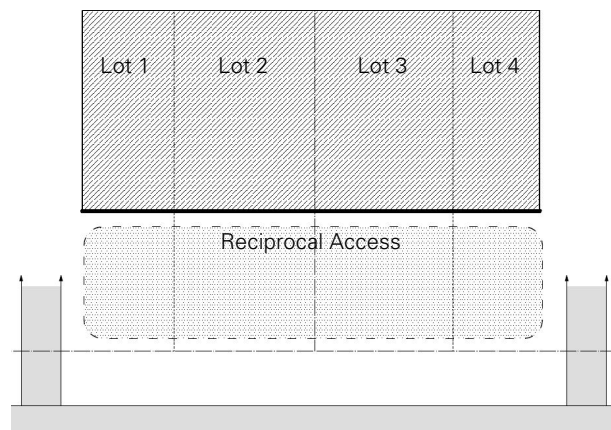


Figure 7: Reciprocal Access

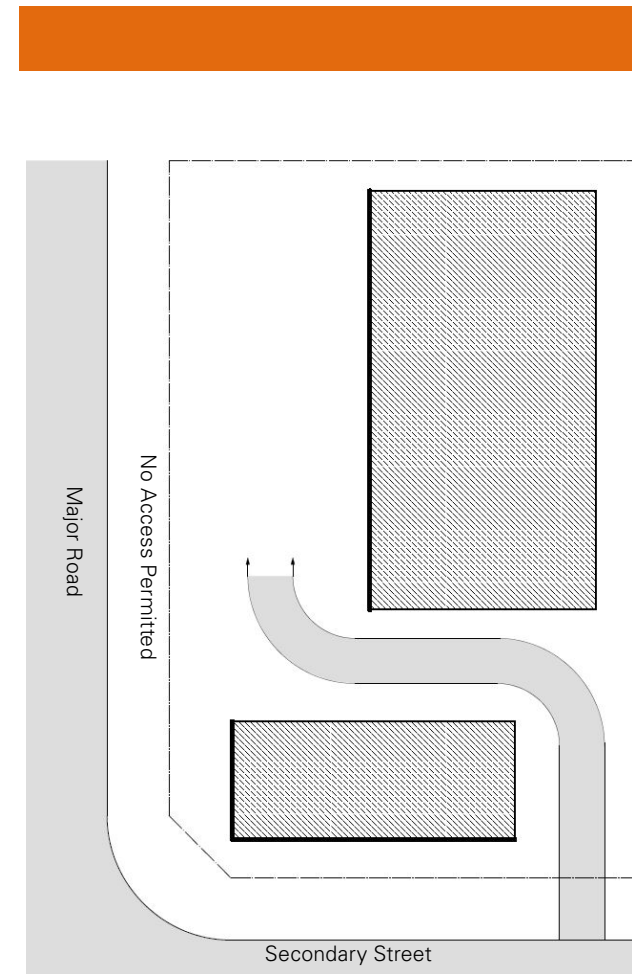


Figure 8: Site Access



4.2 CAR PARKING

Objective

Development within the Project Area will ensure sufficient car parking is provided onsite to accommodate the anticipated requirements of the development, with parking areas located and designed not to impact adversely upon the amenity of the public realm.

Acceptable Outcomes

- Car parking is to be provided on site in accordance with the below standards:

Land Use Type	Minimum	Maximum
3A - General Industry	1 bay per 100m ² of NLA	1 bay per 50m ² of NLA
3B - Light Industry	1 bay per 50m ² of NLA	1 bay per 25m ² of NLA

- A Transport Impact Statement may be required where variations are proposed to the parking standards in the above table, in Scheme 2 (for other land use types), or the Authority considers proposed parking and/or land uses are likely to generate excessive parking demand and/or have a significant impact on the surrounding streets.
- Parking bays shall comply with Australian Standard 2890-1-2004 (as amended).
- Opportunities for reciprocal car parking arrangement and shared parking may be considered to maximise efficiency.
- Car parking shall be designed not to compromise pedestrian and cyclist movement and facilitate clear wayfinding, safety, security and comfort.
- Shade trees shall be appropriately located to ensure protection from the elements and to assist in breaking up any significant expanse of car parking area. And
- Stormwater runoff from small rainfall events is to be managed (retained and/or detained) within car parks.

4.3 BICYCLE PARKING AND END OF TRIP FACILITIES

Objective

Buildings will be designed to encourage and support the use of alternative active travel modes through the provisions of end of trip facilities.

Acceptable Outcomes

- Developments shall be provided with bicycle parking and end of trip facilities in accordance with Table 3 below.
- All facilities shall be designed in accordance with CPTED design principles to promote the safety and security of users.
- All bicycle parking facilities are to be designed, located and constructed in accordance with AS2890.3 (as amended) and Austroads Guide to Traffic Engineering Practice Part 14 – Bicycles.
- End of trip facilities shall be secure facilities capable of being locked and located adjacent to the showers in a well-lit area which is capable of easy surveillance.
- Lockers and locker rooms must be well ventilated and be of a size sufficient to allow the storage of cycle attire and equipment. And
- Bicycle parking and end of trip facilities shall be centrally located and accessible from the road and cycle path.

Table 3: Bicycle Parking and End of Trip Facility Requirements

Bicycle Parking	Bicycle parking must be provided at a minimum rate of one bay per 500m ² of net lettable area (rounded up).
Accessible Showers	A minimum of one unisex shower and change room to be provided. Development with 10 bicycle parking bays or more is to provide a minimum of two female and two male showers, located in separate changing rooms.
Changing Facilities	A locker is to be provided for every bicycle parking bay.





4.4 BUILDING SERVICES

Objective

Services and related hardware required for the function of buildings will be designed and located in a manner that does not negatively impact on the character and amenity of the area and are designed to meet changing needs over time. Site and building services will be fully integrated into the design of buildings or screened from public view.

Authority Policy

Compliance with the Authority's Development Policy 5 - Additional Structures.

Acceptable Outcomes

- Loading and service areas, storage areas and ancillary equipment such as mechanical plant, all piped and wired services, including fire booster cabinets, service meters and roof plant are concealed from public view or screened and integrated into the architectural design in a manner that does not undermine the amenity of the area or quality of the development.
- External fixtures and similar items must be suitably located in areas that minimise the impact on neighbours and comply with the provisions of the *Environmental Protection (Noise) Regulations 1997*.
- Where required to be accessible from the street, distribution of services along building facades rather than clustering in certain locations is to be undertaken.
- A Stormwater Management Plan shall be submitted with each development application for new construction. The Stormwater Management Plan shall demonstrate that stormwater will be contained on site and is to be delivered in accordance with current best practice Urban Water Management and Water Sensitive Urban Design Principles.
- Storage areas shall be in a safe and secure location, designed in accordance with the principles of CPTED. And
- Storage areas shall be located behind the street setback and appropriately screened from public view. Screening of these areas should take the form of either:
 - 1.8 metre high solid wall or fencing, to be constructed in materials and colours compatible with the built form; or
 - mature landscaping that has the same effect as 1.8 metre high wall.



4.5 WASTE REDUCTION AND MANAGEMENT

Objective

Waste management will be planned and co-ordinated as an integral component of the design and development process. Sustainable waste management will be achieved through the combined strategies of waste reduction, reuse and recycling, waste awareness and performance monitoring.

Acceptable Outcomes

- Building design shall include space for waste and recycling storage and collection requirements, taking into account the need for easy access for drop off and collection that limit pedestrian and vehicle disruption.
- Consideration of waste management in consultation with the City of Armadale shall be undertaken and details provided at development application stage to ensure that the design can accommodate the waste management requirements of the development. And
- Service areas and bin enclosures shall be located and screened from general view to minimise odours and sound emissions.

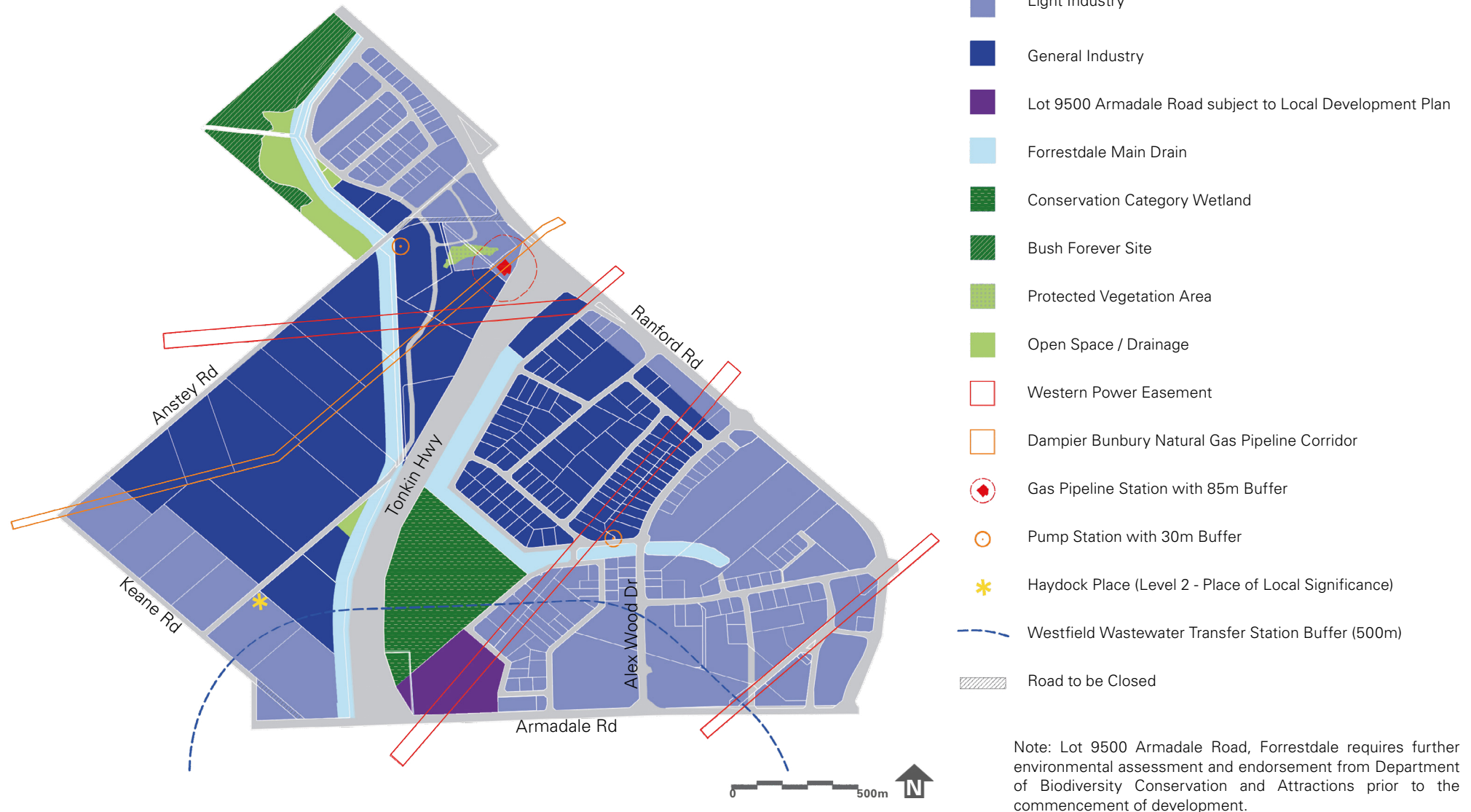




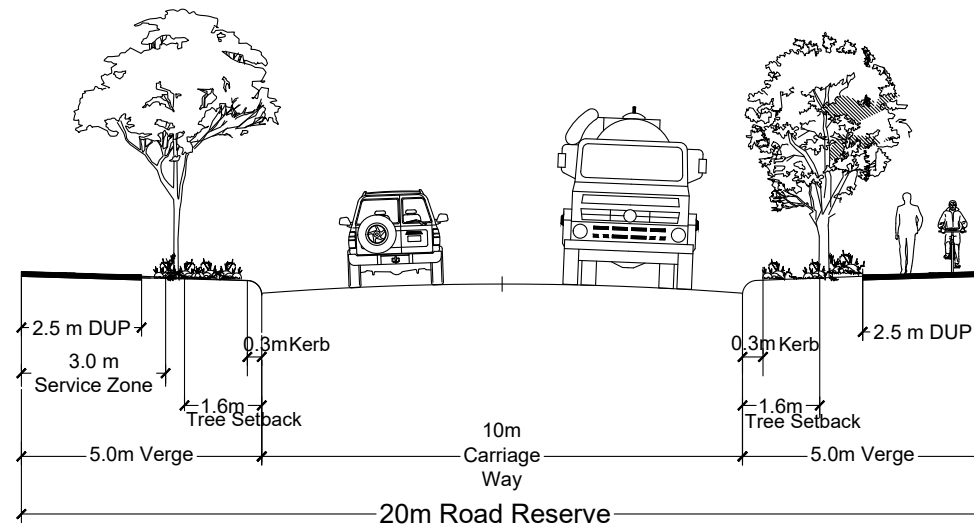
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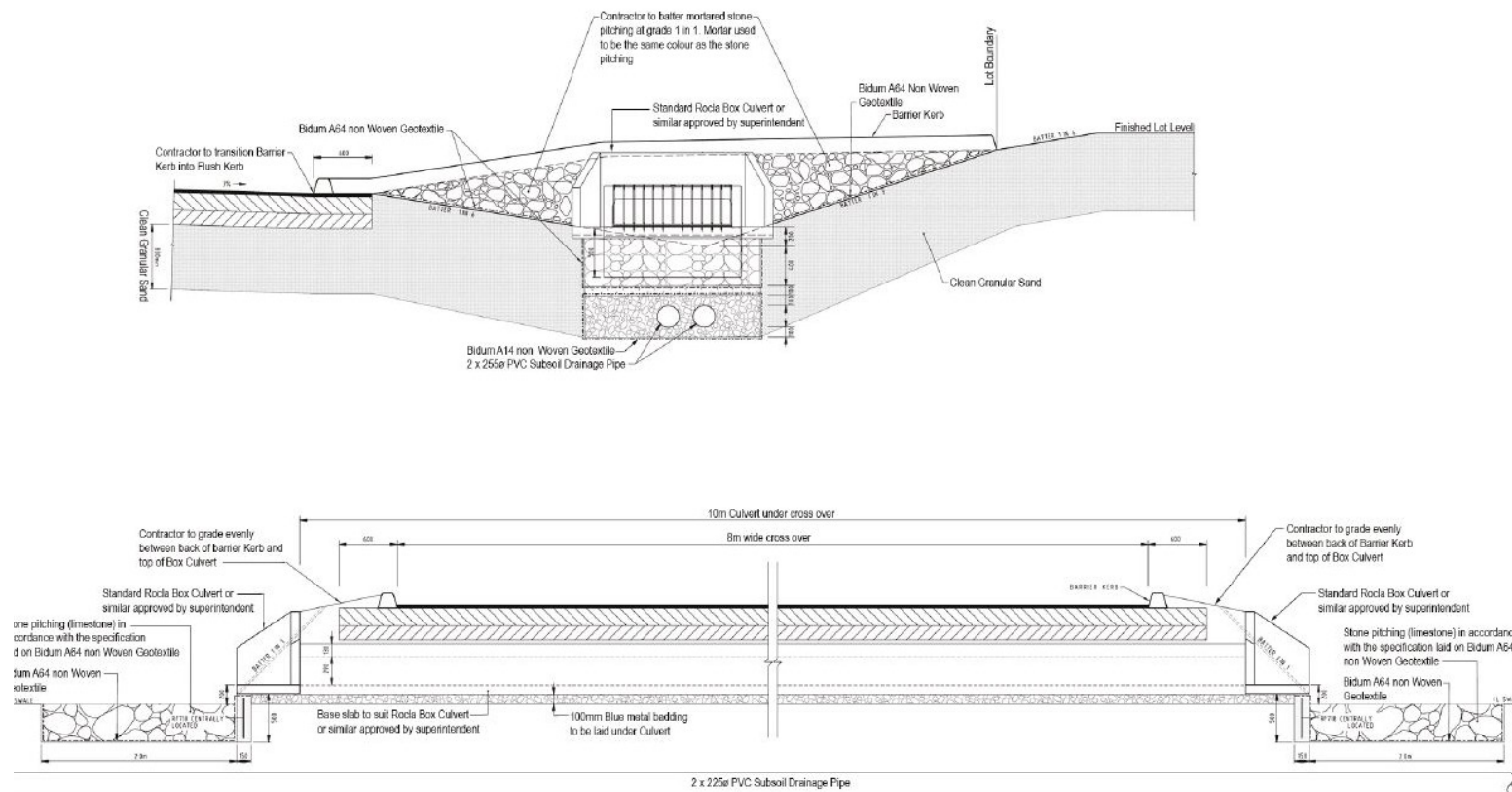
APPENDIX 1 - FORRESTDALE PROJECT AREA LAND USE MAP



APPENDIX 2 - ROAD CROSS SECTION



APPENDIX 3 - DRAINAGE SWALE CROSSOVER SPECIFICATION





APPENDIX 4 - GLOSSARY OF TERMS

Active Frontage	Areas which provide a direct visual or physical relationship between the internal areas of a building and the adjacent public realm and contain uses which attract people, promote activity on the street and provide opportunities for surveillance.
Amenity	Means all those factors which combine to form the character of an area and include the present and likely future amenity.
Articulation	The three dimensional modelling at the periphery of a building, including any changes in facade alignment, balconies, windows and sun shading devices.
At Grade	At ground level (not above/below ground level or on a building structure).
Average Recurrence Interval (ARI)	Means the average or expected value of the periods between exceedance of a given rainfall total accumulated over a given duration. It is implicit in this definition that the periods between exceedance are generally random.
Crime Prevention Through Environmental Design	Crime Prevention Through Environmental Design (CPTED) is defined by four principles, being natural surveillance, access control, territorial reinforcement and space management. Incorporating these four principles of CPTED can help to create a safe and secure environment that encourages activity, vitality and viability, enabling a greater level of security.
Design Excellence	As per Section 3.1 of the Design Guidelines.
Human Scale	The proportional relationship of the physical and built environment (buildings, streets, etc.) to human dimensions to create a comfortable pedestrian environment at street level.
Legibility	The coherency of a building or public realm design and its effectiveness in facilitating the movement and use of its occupants.
Passive Surveillance	The casual or indirect surveillance of streets and public open spaces by people in buildings or the public realm, facilitated through design elements such as balconies, usable roofs, openings, and active uses and clear glazing at street level.
Public Car Parking	Means parking that is provided or offered to members of the public whether or not upon payment of a fee or subject to other condition, but does not include parking that involves the use of a reserved or dedicated parking bay.
Public Realm	Public domain, the public space, streets, laneways, footpaths, parks, gardens, etc. which are normally open to the public without charge.
Site Coverage	<p>Means the area of the site occupied by a building, excluding:</p> <ul style="list-style-type: none">• areas beneath eaves;• unroofed open structures such as pergolas; and• verandahs, patios or other such roofed structures not more than 0.5m above natural ground level, unenclosed on at least two sides and covering not more than 10 per cent of the site area or 50 square metres, whichever is the lesser. <p>Where a basement protrudes up to a maximum of 1 metre above natural ground level, the area above such a basement may be excluded from the calculation of site coverage, provided that it is useable, landscaped (with soft and/or hard landscaping) and generally follows the natural contours of the site.</p>
Wetland	Means an area of permanent, seasonal or intermittent inundation, whether natural or otherwise; fresh, brackish or saline; static or flowing.



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APPENDIX 8 - DOCUMENT CONTROL

DOCUMENT CONTROL	
Adoption Date:	26 March 2014
Amendment Date:	Nature of Amendment:
2 September 2019	Comprehensive Review and Rebranding
{Date}	{Description}
{Date}	{Description}
{Date}	{Description}
{Date}	{Description}
{Date}	{Description}

MORE INFORMATION

If you require any further information or explanation of the Authority's planning framework, Development Applications or Scheme 2, the following options are available:

Website:

review planning documents on the Authority's website:

www.mra.wa.gov.au

Email:

email your query to the Authority at:

planning@mra.wa.gov.au

Phone:

phone the Authority to speak to a planner on (08) 6557 0700

Meeting:

book a meeting to discuss your proposal with a planner by phoning (08) 6557 0700