

SOUTH HEDLAND TOWN CENTRE DESIGN GUIDELINES



Town of
Port Hedland

DRAFT
05

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CONTENTS

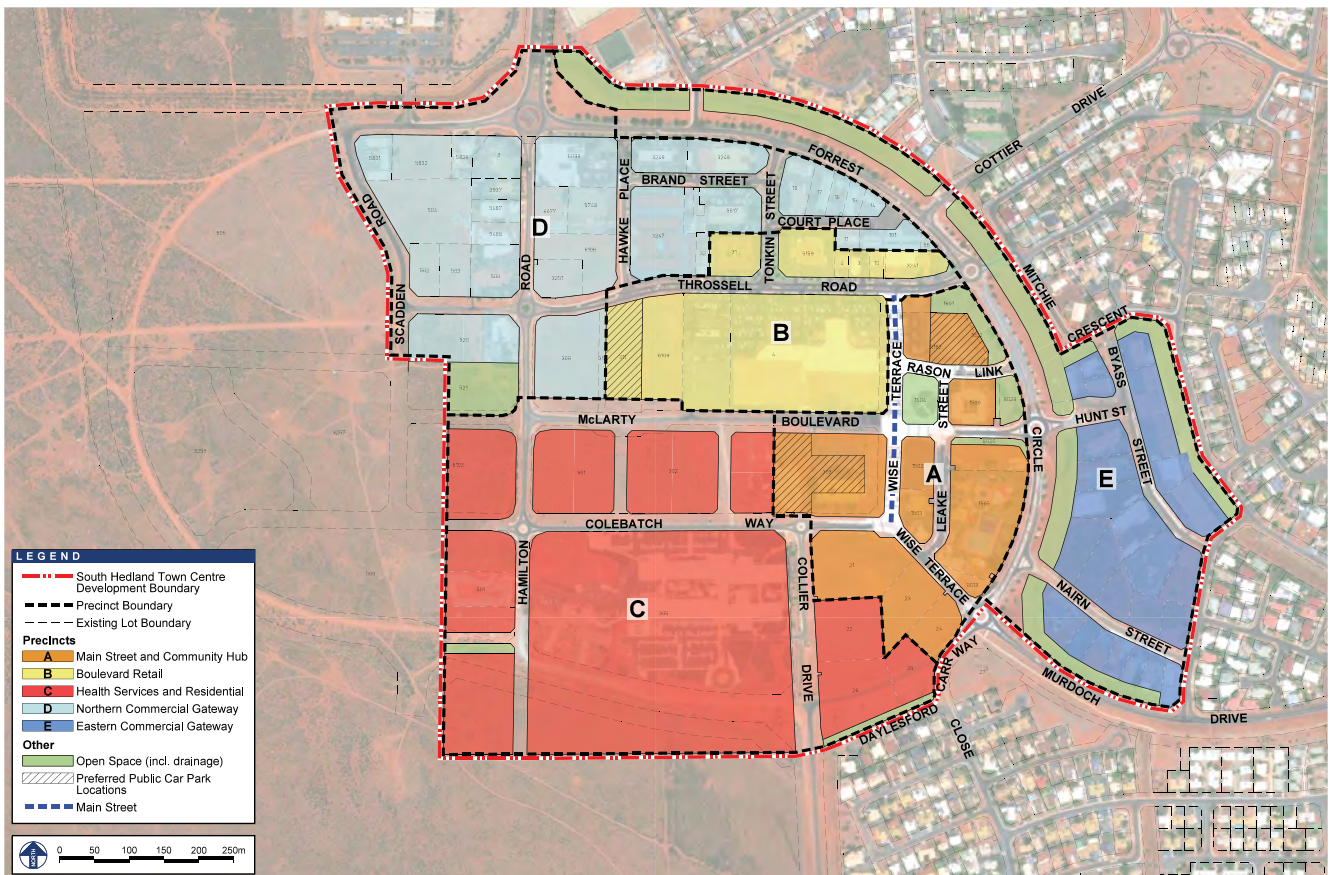
1.0 INTRODUCTION	4	4.4 LANDSCAPE DESIGN	28
1.1 BACKGROUND		4.4.1 BIODIVERSITY	
1.2 VISION		4.4.2 WATERING	
		4.4.3 SOFT-SCAPE ELEMENTS	
2.0 PURPOSE + STRUCTURE	6	4.4.4 HARD-SCAPE ELEMENTS	
2.1 PURPOSE		4.4.5 SCREENS AND FENCES	
2.2 STRUCTURE AND USE		4.4.6 RECOMMENDED PLANT SPECIES LIST	
2.3 RELATIONSHIP TO GOVERNMENT			
2.4 LODGEMENT REQUIREMENTS		PRECINCT PLAN	32
2.5 APPROVAL PROCESS			
3.0 CLIMATE + SITE	8	CHECKLIST	36
4.0 DESIGN GUIDELINES	10		
4.1 URBAN DESIGN			
4.1.1 SAFETY AND SURVEILLANCE			
4.1.2 ACOUSTIC SEPARATION			
4.1.3 LIGHTING			
4.1.4 PEDESTRIAN FRIENDLY STREETS			
4.1.5 VEHICLE PARKING			
4.1.6 PUBLIC ARTWORK			
4.2 BUILT FORM DESIGN	14		
4.2.1 FACADES			
4.2.2 BUILDING CORNERS			
4.2.3 ROOF FORMS			
4.2.4 MATERIALS			
4.2.5 BUILDING ENTRANCES			
4.2.6 STREET SETBACKS			
4.2.7 PRIVATE OUTDOOR LIVING			
4.2.8 COMMUNAL OUTDOOR LIVING			
4.2.9 ADAPTABILITY			
4.2.10 BICYCLE FACILITIES			
4.2.11 BUILDING SERVICES			
4.3 ENVIRONMENTAL DESIGN	22		
4.3.1 SOLAR DESIGN			
4.3.2 VENTILATION			
4.3.3 THERMAL EFFICIENCY			
4.3.4 ENERGY AND APPLIANCES			
4.3.5 PLUMBING FIXTURES			
4.3.6 WATER RECYCLING			
4.3.7 WATER MANAGEMENT			
4.3.8 WASTE MANAGEMENT			

1.0 INTRODUCTION

1.1 BACKGROUND

The South Hedland Town Centre Design Guidelines are part of an exciting initiative to revitalize and expand the Town Centre of South Hedland. The State Government has committed \$23.3 million through the Royalties for Regions program to support infrastructure upgrades and expansion for the redevelopment of the South Hedland Town Centre. This document was prepared as a supplement to the South Hedland Town Centre Development Plan, which was adopted by the Town of Port Hedland in October 2013.

The design guidelines presented in this document have been developed to support the implementation of the South Hedland Town Centre Development Plan and Pilbara's Port City Growth Plan which are being lead by the Town of Port Hedland.



1.2 VISION

The concept of a more vibrant, mixed-use district was established in the Pilbara's Port City Growth Plan where the future Town Centre was described as:

“...a place of ‘northern Australian life’, Pilbara’s Port City Centre is a dynamic, accessible and inclusive place that is the heart of the South Hedland community and the major regional centre for the City of 50,000 people. It is an exciting destination for visitors, business people and residents. It has great public spaces, friendly streets, landmark buildings and architecture. There are many visual cues through public art and spaces, and a strong association with indigenous heritage and the natural landscape. Like the many other destinations throughout Pilbara’s Port City, culture and social destinations are woven into the fabric of the Town Centre...”

— Pilbara’s Port City Growth Plan, 2012, p. 8

The vision for the Town Centre has evolved through the processes of preparing the South Hedland Town Centre Development Plan. From discussions with Council and the community in a series of public meetings, the following objectives were established for redevelopment of the Town Centre:

- To improve the image of South Hedland as an attractive and convenient place to live.
- To create a vibrant urban centre, unlike any other place in Port Hedland, which establishes a unique identity for the South Hedland community.
- To expand the range and quality of retail, entertainment and community services available in South Hedland, especially restaurants, cafés and night-time entertainment options.
- To increase housing choice and affordability in the community by developing a variety of more dense, urban housing types, including live/work combinations, units suitable for hospital staff and transient workers’ accommodation.

- To encourage pedestrian and bicycle access to and around the Town Centre.
- To learn from the Aboriginal people of South Hedland and celebrate the Indigenous heritage of the region.
- To demonstrate effective ways to design with the climate and to promote awareness and appreciation of the Pilbara environment.
- To establish a strong sense of security in the Town Centre and to ensure the comfort of all residents and visitors, including children, the disabled and the elderly.

These objectives support the vision of a more dynamic, accessible, inclusive urban place that is the heart of the South Hedland community and an exciting destination for visitors.

A number of guiding urban design and planning principles have been developed in line with the view of creating a dynamic, accessible and inclusive regional centre, including:

- Improved connections to the suburban and natural surroundings of South Hedland;
- Improved walk-ability within and to the Town Centre core;
- A rich and diverse set of public areas, both active streetscapes and walkways;
- A strong mix of residential, retail and offices;
- Places for recreational activity in civic spaces and new open space areas;
- Housing choice for a variety of incomes and ages;
- High degree of legibility building on the existing street network;
- High levels of passive surveillance of public areas through buildings addressing the street;
- Recognition of the existing linkages to the landscape;
- Strengthen the medical precinct by promoting mixed use development adjacent to the hospital;
- Increased residential densities close to the Town Centre encouraging pedestrian movement.



2.0 PURPOSE & STRUCTURE

2.1 PURPOSE

Design Guidelines are the link between a plan and its implementation. The South Hedland Town Centre Development Plan, 2013 (SHTCDP) specifies the community's development intentions for the South Hedland area, while these Design Guidelines (DGs) have been prepared to guide and control development within the site identified in the SHTCDP.

Development of the South Hedland Town Centre is under the jurisdiction of the Town of Port Hedland and these guidelines are endorsed by the council as a supplement to the South Hedland Town Centre Development Plan and are adopted as a local planning policy.

The Town of Port Hedland will use these guidelines as a tool for assessing development applications in conjunction with other pertinent documents.

2.2 STRUCTURE

The South Hedland Town Centre Design Guidelines have been structured in the following three parts to assist proponents in preparing their designs and applications.

2.2.1 DESIGN OBJECTIVES

The Design Objectives outline the design intent or philosophy underpinning the Development Controls (mandatory requirements) and Design Guidance criteria and explain the desired outcome achieved by them.

2.2.2 DEVELOPMENT CONTROLS

The Development Controls noted in these Design Guidelines are mandatory for all development proposals. They will collectively ensure that the Design Objectives are met.

Applicants may provide alternative design solutions to these requirements if they can successfully demonstrate that the Design Objectives are met or exceeded.

2.2.3 DESIGN GUIDANCE

The Design Guidance section recommends some additional measures by which a development can achieve a higher level of sustainable design, community interaction and/or architectural character. Adherence to these recommendations will ensure a 'Best Practice' outcome.

2.3 RELATIONSHIP TO OTHER PLANNING INSTRUMENTS

To ensure they remain an effective tool for generating quality design, the Design Guidelines, once adopted, will be reviewed regularly under the Town of Port Hedland's local planning policy review procedures.

These Design Guidelines should be read in conjunction with:

Council Planning Policies

- These Design Guidelines should be read in conjunction with Town of Port Hedland Town Planning Scheme No.5 (TPS5) and all relevant local planning policies, including the South Hedland Town Centre Development Plan (SHTCDP) which is incorporated into TPS5 pursuant to Clause 5.2.1(a).
- Universally accessible design is encouraged as a priority for all development proposals. Universal accessibility to be in accordance with the Town of Port Hedland Disability Access and Inclusion Plan 2013 - 2017 (endorsed by council on 25th September 2013).

Residential Design Codes

Where the provisions of the R-Codes are in conflict with the South Hedland Town Centre Design Guidelines, the provision of the South Hedland Town Centre Design Guidelines shall prevail. Where these Design Guidelines are silent, the provisions of the R-codes shall apply.

National Construction Codes

All construction must comply with the current National Construction Codes (NCC). Where the provisions of the National Construction Codes are in conflict with these Design Guidelines, the provision of the National Construction Codes shall prevail.

2.4 LODGMENT REQUIREMENTS

Applications are to be made to the Town of Port Hedland for planning approval. As a minimum, the application should comprise:

- A completed 'Application for Planning Approval' form, available from the Town of Port Hedland's website;
- A copy of the Certificate of Title; and
- TWO copies of the development plans with the following details:
 - Site plan (1:200 preferred) of property with lot dimensions and area, north point, contours (or levels), abutting street name(s), location of proposed building(s) including setbacks to boundaries, location of access/egress point(s), car parking and manoeuvring areas, infrastructure within the abutting road reserve (e.g. power poles, signage and Telstra pits);
 - Floor plans of proposed building(s) (1:100 preferred);
 - Elevations of proposed building(s) (1:100 preferred) including the existing and finished ground levels and the means to stabilise exposed sloping soil (e.g. batters, retaining walls);
 - Landscaping concept plan for works forward of the building line (including species list);
 - Stormwater management measures;
 - Construction materials and colour scheme;
 - Fencing details (type, location and height); and
 - Any other information as necessary to demonstrate compliance with these guidelines.

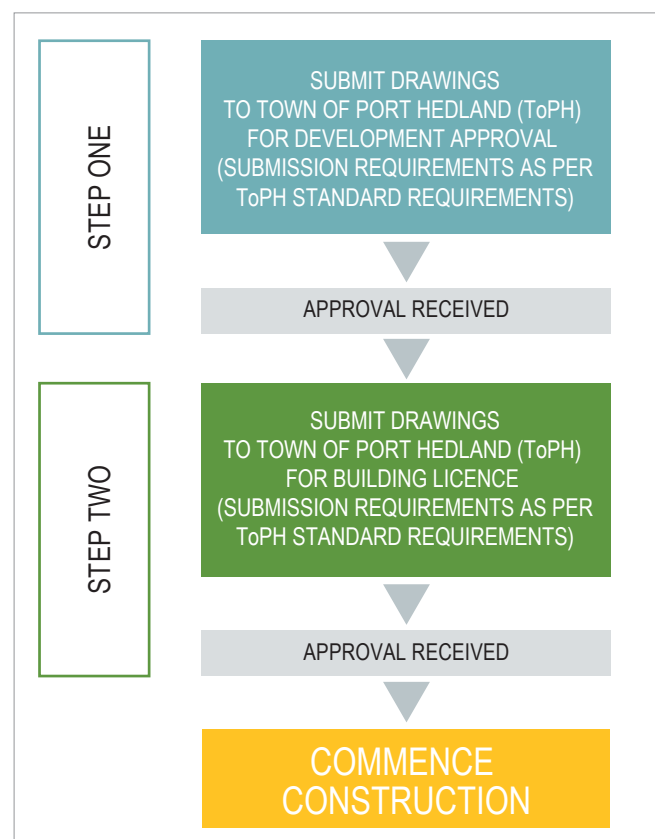
It should be noted that following the issue of planning approval, an application is then required to be submitted for issue of a building license prior to the commencement of works.

2.5 APPROVAL PROCESS

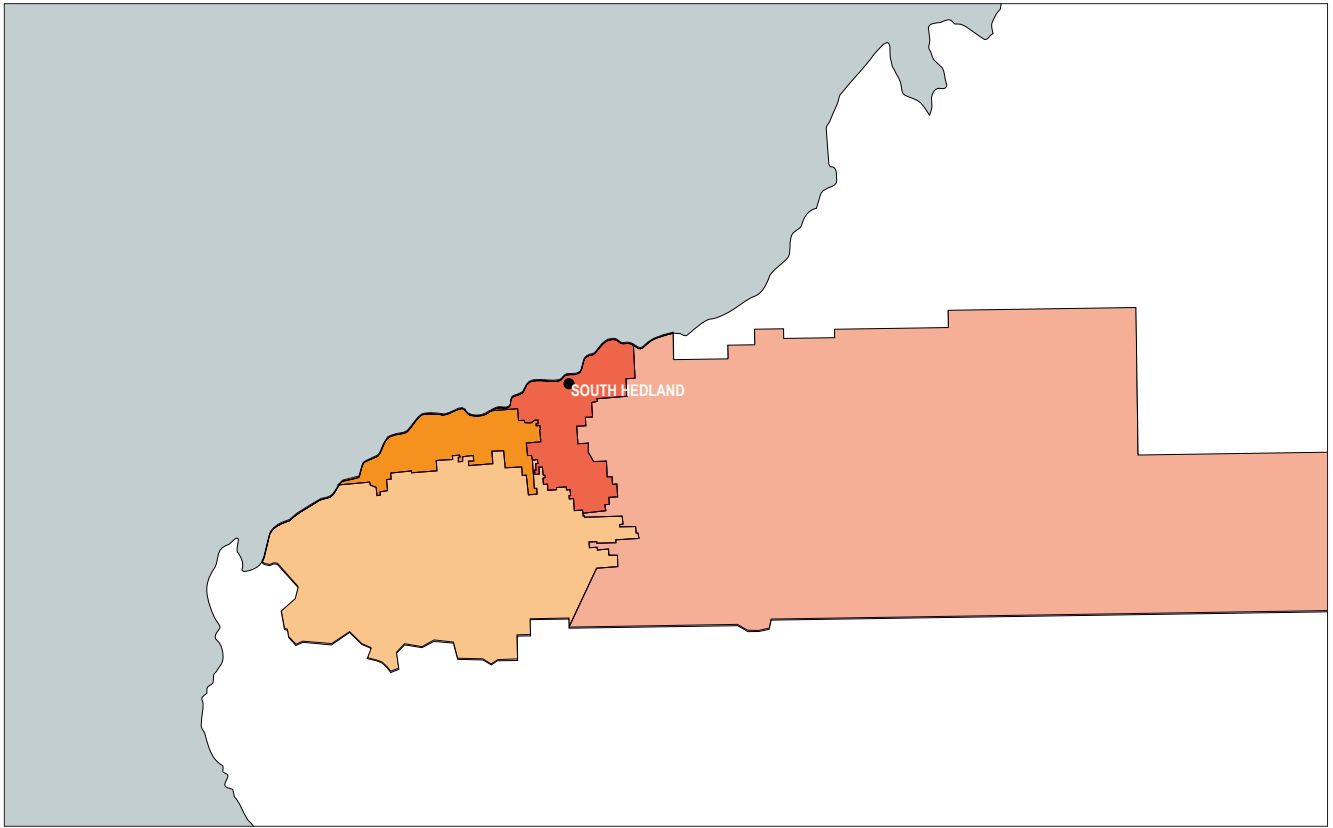
All proposed development within South Hedland Town Centre will be subject to planning approvals and building licenses administered by the Town of Port Hedland.

A Development Application is required to be prepared in accordance with the procedures and requirements set out by the above documents. Once a Development Application has been lodged with the Town, it will be assessed against the provisions of all relevant documents.

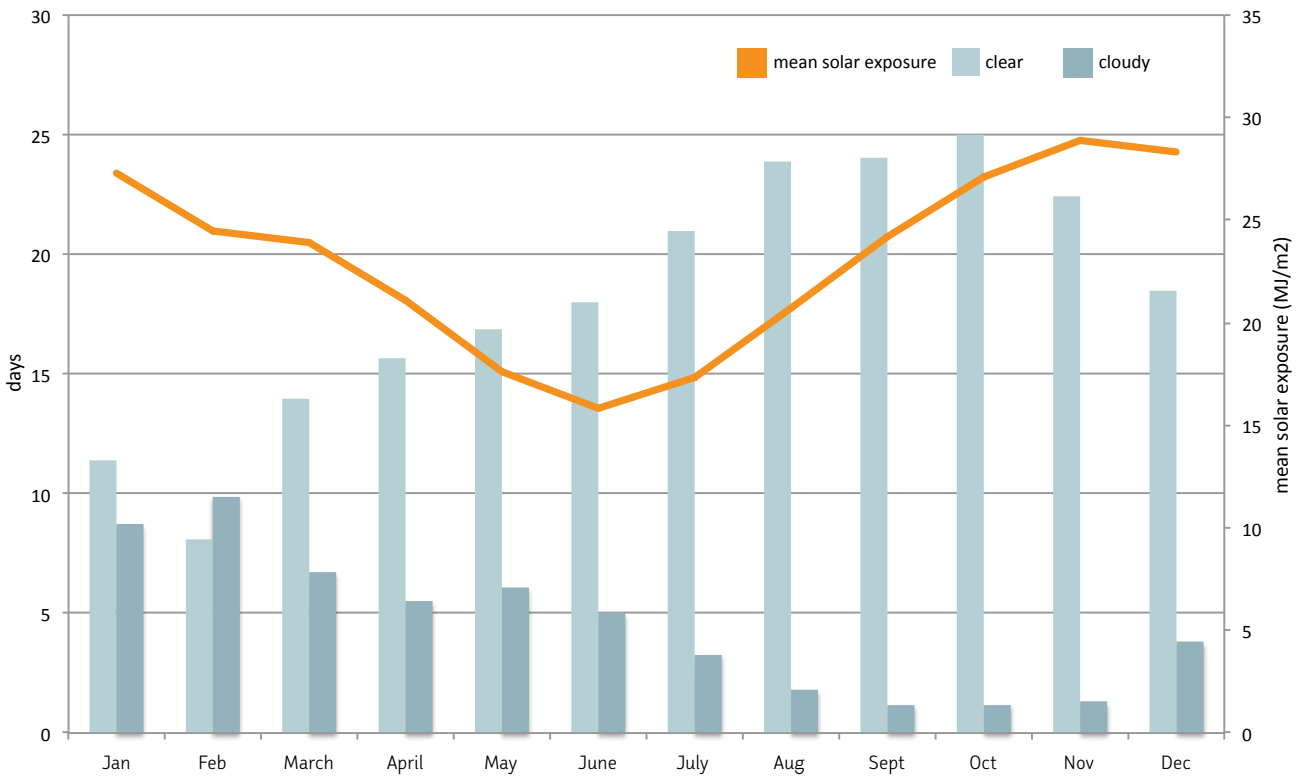
A Development Checklist is included at the back of this document and a copy of the application for Planning Approval form can be found on the Town's website. These assessments will ensure all applicable standards, controls and requirements have been met and the development is consistent with the long term outcomes envisaged for the South Hedland Town Centre.



3.0 CLIMATE AND SITE



The Pilbara Region in the north West of Western Australia. NTS.



Clear vs. Cloudy Days (Bureau of Meteorology)

3.1 CLIMATIC CONSIDERATIONS

South Hedland is located on a slightly elevated section of the spinifex plains that stretch across the Western Pilbara, from the mangrove-lined coast to the mineral-rich ranges of the interior.

The climate is classified as “Hot Humid (Tropical)” but local conditions differ significantly from the characteristics of a true tropical region. The average relative humidity, for example, reaches a maximum of only 60%, and is less than 50% from April through December. Average daily maximum temperatures range from 27 to 37°C. The winter months, from May to September, are consistently pleasant, yet summer temperatures are amongst the highest in the State with extended periods when the mercury rises over 40°C. Unlike a tropical climate, however, the diurnal temperature range (difference between night and daytime temperatures) in South Hedland is relatively high, averaging from 10°C up to 17°C in the winter months.

Rainfall in South Hedland is low, averaging just over 300mm a year, but it is often concentrated in severe thunderstorms and occasional cyclones during the summer months. Storm water run-off is facilitated by the network of wide drainage channels (or swales) that run through South Hedland and all development must be designed in relation to this area-wide drainage system. All buildings must also meet the requirements for construction in cyclonic category areas, as specified by the BCA.



South Hedland drainage swale after rain.



South Hedland drainage swale during the dry season.



4.0 DESIGN GUIDELINES

4.1 URBAN DESIGN

4.1.1 SAFETY AND SURVEILLANCE

Objectives:

- Crime Prevention through Environmental Design (CPTED) principles have been applied throughout the South Hedland Town Centre Development Plan and promoted throughout these Design Guidelines.
- Secure buildings that allow for casual surveillance to the public realm.
- A secure City Centre throughout the day and at night.

Development Controls:

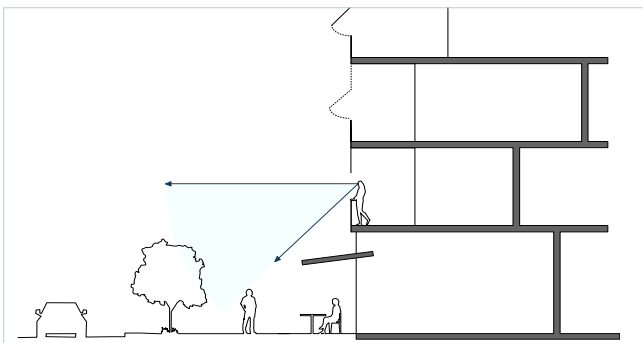
- Passive surveillance and physical security measures must be provided to all buildings by providing windows and elevation elements facing pedestrian access ways, public open space, primary streets and laneways.

Design Guidance:

- Clear sight lines from buildings to streets and public spaces and parking lots are encouraged. Residential components of developments can provide surveillance over streets, car parks and/or any areas of public open space.
- Building elements can be designed to ensure they do not provide unintended access to upper levels or roofs of a building.
- Any security grills or shutters (if installed) can be integrated into the overall elevation and detailing of the building. It is encouraged that the design of these components do not reduce the level of natural surveillance onto the public realm.



Opportunities for effective public realm surveillance by locating balconies adjacent to POS.



Providing for passive surveillance from upper level dwellings to the street below will ensure a level of security to the public realm.

4.1.2 ACOUSTIC SEPARATION

Objectives:

- To ensure a high level of amenity and acoustic comfort by protecting the privacy of residents from external noise sources.

Development Controls:

- Noise generating services such as air conditioning units must be remotely located or utilise noise control measures to minimise noise impacts on adjacent users.

Design Guidance:

A range of methods can be used to mitigate noise. These include:

- Building design and room layout, such as locating outdoor living areas and indoor habitable rooms away from noise sources.
- Building construction techniques and upgraded treatment to facades, such as glazing, window frame and ceiling insulation and sealing of air gaps.
- It is recommended to submit an acoustic report prepared by a qualified acoustic engineer for any mixed-use developments.



Air conditioning units located discretely and away from outdoor dining areas.

4.1.3 LIGHTING

Objectives:

- To promote lighting that contributes to creating a safe night-time environment whilst also increasing property security.
- To provide a practical and artistically lit night-time environment.
- To ensure vibrancy within the town centre at all times of the day and night.
- To reduce building energy use by ensuring efficient lighting systems are installed in all buildings.

Development Controls:

- All lighting proposals as per Australian Standards.
- All outdoor, car park or security lighting is to be directed downwards with no light spill above the horizontal plane.
- Building entrances must be well lit for identity and safety.
- Feature lighting must be integrated into the design of the project.
- External light fixtures must be robust, vandal resistant and complementary to the design character of the affected building or open space.

Design Guidance:

- Consider the impacts of glare on motorists and cyclists, as well as pedestrians.
- Where appropriate, supplement functional lighting requirements with up lighting of facades and landscape elements, display lighting in shop fronts, and illuminated signage.
- Motion and light sensors which automatically turn-off lighting when natural daylight is sufficient or the room is unoccupied are recommended.

4.1.4 SIGNAGE

Development Controls:

- Signage shall be addressed as a condition of planning approval and shall be subject to any council signage policy or local law.



An example of shopfront signage.

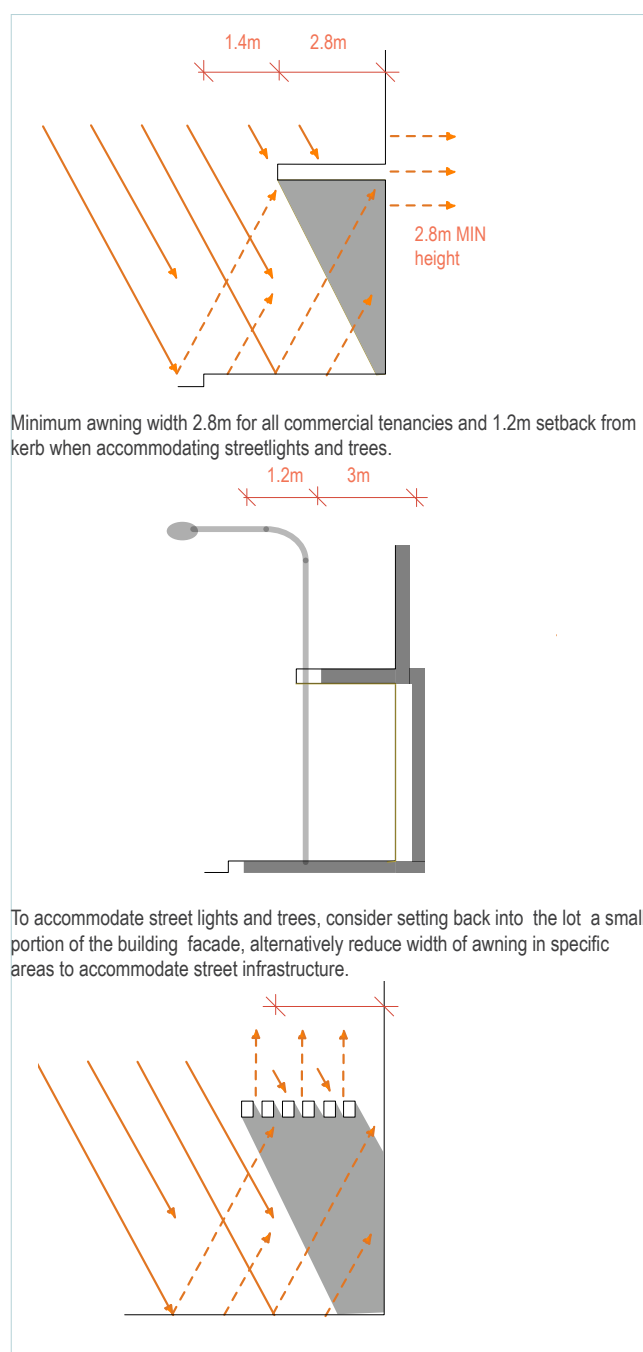
4.1.5 PEDESTRIAN FRIENDLY STREETS

Objectives:

- To ensure pedestrian-friendly streets with sheltered footpaths, natural shade and vehicle/pedestrian integration.

Development Controls:

- Awnings must be provided to Ground Floor commercial developments with a minimum width of 3.0m and minimum height above ground level of 3.5m to the underside.
- Awnings must be designed with regard to the existing street lighting and trees installed within the road reserve.



Broken or segmented awnings may be utilised to ensure hot air does not become trapped beneath them. Ensure that continuous shade is provided to the building facade and footpath below for a majority of the day.

4.0 DESIGN GUIDELINES

4.1 URBAN DESIGN

4.1.6 VEHICLE PARKING

Objectives:

- To ensure the provision of sufficient, safe and shaded parking within a functional and attractive streetscape.
- Ensure any landscaping within paved areas has the best opportunity for healthy growth.

Development Controls:

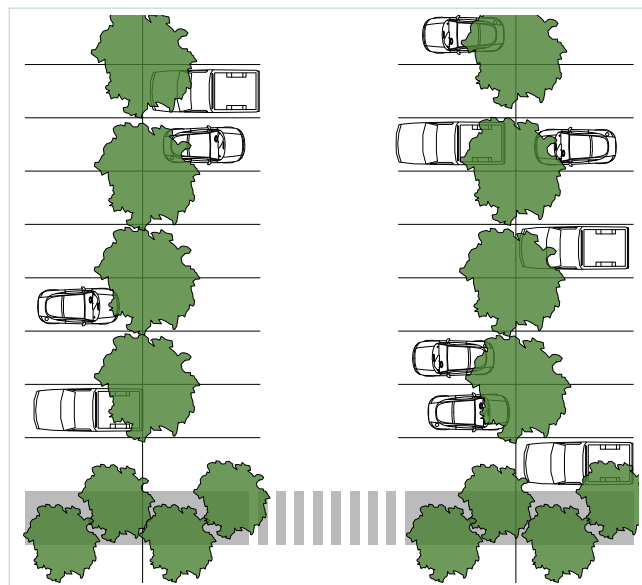
- Ensure all car parking areas proposed as part of any new development are provided with surveillance.
- Ensure all loading and unloading areas are well lit.
- Parking, including visitor parking, must be designed and constructed as per the Local Planning Scheme and Council's guidance.
- Any public on-street parking that is removed as part of a development shall be provided on-site and in an area with public access or via a cash-in-lieu payment system.
- Where car parking is provided at grade and is not covered by a roof, shade trees must be provided in the ratio of at least one (1) for every four (4)-car bays- rounded up to the nearest whole tree where necessary.
- Upper deck parking must be shaded by a roof or shade structure, or include shade trees as per at-grade parking requirements.
- Trees planted in the urban environment should be installed as per clause 6.3.4.1 - Trees in Paved Areas of the IPWA Guidelines for Subdivisional Development.
- Disabled parking shall be provided in accordance with Australian Standards.
- Locate parking to the rear of the lot.
- Parking for uses other than the predominant use must be from the rear of the building.

Design Guidance:

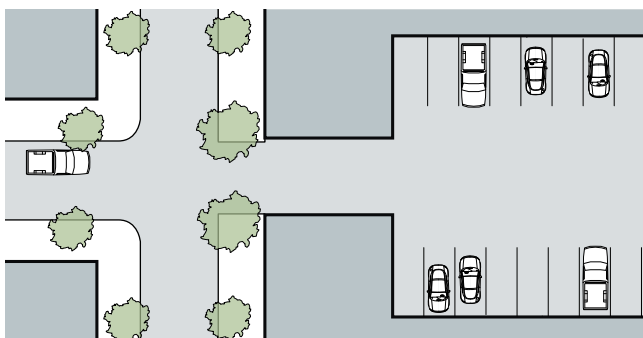
- Design specifications for parking lots, including bay and aisle dimensions and surface treatments, are detailed in TPS5.
- Upper deck parking can be screened from the street.



An example of screening on a decked carpark structure, Germany.



Shade trees must be provided at a ratio of one tree for every four car bays. Continuous shade must also be provided to areas of walkway within all carparks.



Large carparking areas can be screened from the street by built form



An example of mature shade trees within a carpark.

4.0 DESIGN GUIDELINES

4.1.7 PUBLIC ARTWORK

Objectives:

- To ensure public art projects are delivered in a strategic manner which will provide maximum community benefit.
- To provide artwork within the public realm that helps in promoting an area unique and specific to its regional context, as well as providing ways to involve the residents of South Hedland in the development and maintenance of their town.
- Promote diversity of cultural expression, recognising both the indigenous and non-indigenous heritage of South Hedland.

Development Controls

- All public artwork proposals to be in line with the Town of Port Hedland Interim Public Art Strategy 2013.

Design Guidance:

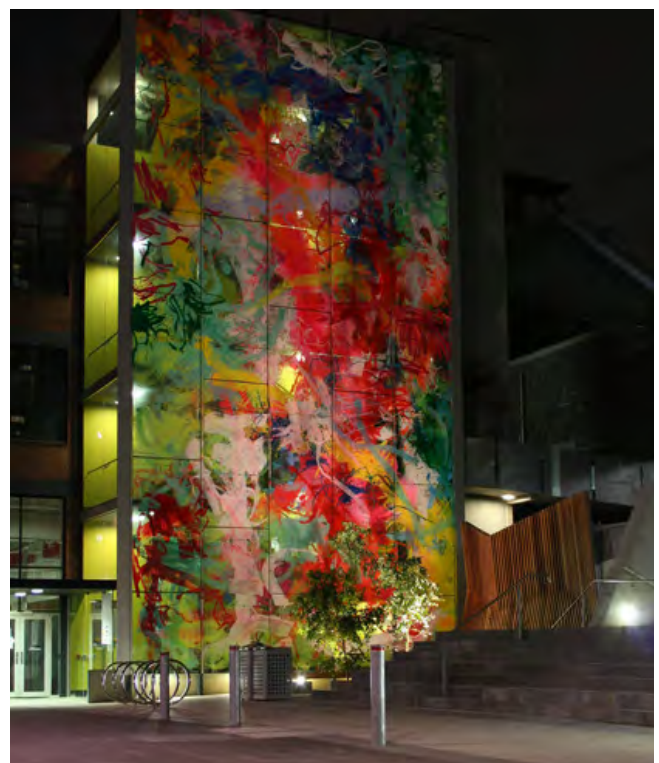
- Engage local artists, school children or other community groups when possible in the design and production of public art elements.
- Consider interactive and changeable installations that encourage people to engage creatively with the environment and offer continuing variety and interest in the public realm.
- Select durable materials and finishes and consider the on-going maintenance of all public art components.
- Where required integrate public art into the initial design and construction of buildings and open spaces, rather than adding it as an independent after-thought. Consider art, for example, in the custom design of common architectural fixtures, such as security gates and ventilation grilles, and the functional elements of outdoor spaces such as bollards, benches and rubbish bins.



An example of site responsive public art that is already evident in Port Hedland.



Foundation Housing artwork by CODA + Olga Cironis integrated into the building form.



RMIT University Library, Melbourne

4.0 DESIGN GUIDELINES

4.2 BUILT FORM DESIGN

4.2.1 FACADES

Objectives:

- To ensure that built form reflects the unique characteristics of the Pilbara and enlivens the Town Centre with forms, materials, proportions and elements suitable to the climate and place.
- To ensure building facades are of high architectural quality, interesting, well proportioned and enhance the public domain and street character.
- To ensure that the building elements are integrated into the overall building form and facade design.
- Minimise blank walls overlooking car parks, streets and areas of public open space.

Development Controls:

- Ground floor levels should provide strong activation facing onto the streetscape. Large blank walls are not permitted.
- Buildings over 4 storeys must be articulated to define base, middle and top sections, with each composed in relation to the overall proportions of its facade.
- Elevations must be articulated to differentiate between units and break down long facades.
- Balconies (whether primary or secondary) are mandatory on all street-facing residential facades. Refer to PRIVATE OUTDOOR SPACE for minimum size controls.

Design Guidance:

- Designs for buildings over three storeys can clearly articulate the base (or podium) and upper sections using terraces through balconies and awnings.
- Facades can be composed with an appropriate scale and proportion that responds to the buildings use. This will enable buildings to be easily 'read' by a pedestrian or observer as to their function and purpose.
- Facades at street level can address the pedestrian by way of appropriate scale.
- A change in colour or texture will differentiate between tenancies and break up long facades.

4.2.2 BUILDING CORNERS

Objectives:

- To ensure building corners adequately address their prominence within the streetscape, particularly where they form a 'gateway' or terminate a view corridor.

Development Controls:

- Buildings at corners must address both street frontages.
- Corner buildings must be given strong architectural expression at street level and exhibit a greater level of design within the urban context.
- Where a landmark or gateway is created through building form, it must be designed as an integral part of the architectural composition and detailing of the building.
- Blank walls to corner frontages will not be permitted.

Design Guidance:

- It is encouraged that continuity of streetscape take precedence over corner towers or 'feature' elements.



An example of building elements (balconies) integrated into the overall building form and adds interest to a long plain facade.



This corner feature element is well integrated into the architecture of the building and the site. Primary School, France.

4.2.3 ROOF FORMS

Objectives:

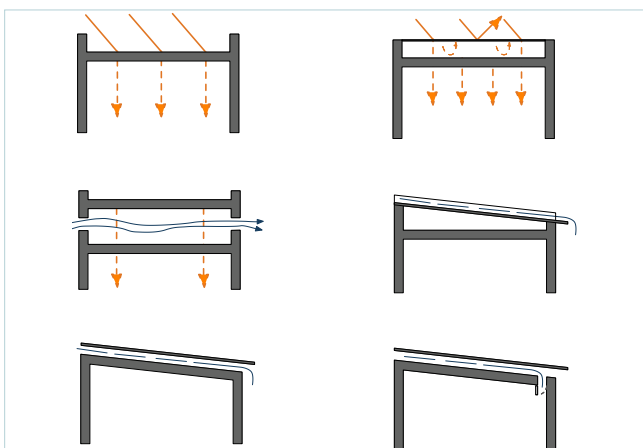
- To ensure a varied roof profile to distinguish the Town Centre from the surrounding neighbourhoods.
- To ensure roof forms within the town centre are integrated and respond to the intended character of the whole precinct.
- To encourage roof forms which allow the greatest protection and response to the harsh Hedland climate.

Development Controls:

- Any roof-mounted building services must be integrated into the design of the roof and must not be visible from the public realm. This can include lift overruns, roof-mounted air conditioning units, media services.
- Use roof forms to identify individual units within a block of attached buildings. This will assist in breaking down the horizontal scale of long facades.

Design Guidance:

- Rainwater runoff from the roof requires careful civil and landscape design to redirect runoff away from the building and to meet the on-site detention requirements.
- Roof designs that allow for the movement of cool air and prevent direct heat gain into the building are recommended.
- Developments can provide or plan for future installation of photovoltaic panels by designing the roof so that panels can be mounted parallel to the roof plane.
- Roof forms are encouraged to be simple and avoid 'feature' elements in the design.
- Consider the inclusion of shaded and appropriately planted roof decks and gardens, particularly in higher density housing development where private outdoor spaces is limited.
- The application of light coloured roofs will help to lessen heat gain.
- Small openings in solid roofs offer weather protection and help alleviate heat gain.



The form and construction of the roof will affect the way in which the building performs thermally. The movement of breezes around the roof form and the level of insulation from the sun provided by its design are just two of the important things to consider when designing the roof of your building.

4.2.4 MATERIALS

Objective:

- To ensure the use of high quality materials that convey a sense of permanence, are place-responsive and detailed in a range of colours reflecting the local environment.

Development Controls:

- Materials must be chosen for their durability, robustness and appreciation of the environmental conditions of South Hedland and its location within a cyclone Region D location.
- Corrugated steel must not be used as a main wall cladding material, however use as a feature is permitted
- Colours must be selected to reflect the local environment and reduce heat absorption, avoiding dark, heat absorbing and very light, highly reflective colours.
- Facades of buildings that face the street must not use highly reflective materials.

Design Guidance:

- In extreme climates, such as in the Pilbara, managing the effectiveness of building materials in reflecting heat, reducing the flow of heat and absorbing, storing and releasing heat (radiation, convection, conduction) is fundamental to providing comfort inside buildings.
- High solar exposure also means that many materials can become prematurely weakened or damaged. It is preferred that materials have high resistance to solar damage.
- Appropriate heavyweight materials include stone, brick, concrete block, in-situ or pre-cast concrete and rammed earth.
- Lightweight construction systems are beneficial in hot arid climates as they reduce thermal heat build-up and transference.
- Permeable materials including perforated metal mesh, timber battens and trellis', enable air flow but block direct solar access to the interior.



A good example of a combination of materials used in South Hedland currently.

4.0 DESIGN GUIDELINES

4.2 BUILT FORM DESIGN

4.2.5 BUILDING ENTRANCES

Objectives:

- To ensure clearly defined entries that add interest and activity to the street.
- To create entrances that provide a desirable identity for the development.
- To ensure that building entrances appropriately orient the visitor

Development Controls:

- Building entrances shall be well lit for identity and safety.
- Coordinate the location of building entries with features of the external environment, including crosswalks, traffic signs, sidewalk amenities and street tree planting.
- Building entries must be designed as integral and identifiable elements of the building facade and must be clearly visible from roadways and footpaths.
- Individual entries from the footpath must be provided to all ground level residential and commercial tenancies addressing the street.
- Separate entries must be provided for vehicles and pedestrians, and for different types of uses in a building.
- Where not on the primary street, entries must be provided with shelter, using built shade or shade trees.

Design Guidance:

Building entrances can improve the presentation of the development to the street by:

- Being located to relate to the existing street and subdivision pattern, street planting and pedestrian access network;
- Being a clearly identifiable element of the building within the street;
- Achieving clear lines of transition between the public streets, shared private circulation spaces and the private realm.
- Using deep Awnings that provide protection to the entrance of the building as well as helping to identify the entrance.
- Being designed for universal access.
- Installation of security screens to entrance doors will achieve adequate cross ventilation.

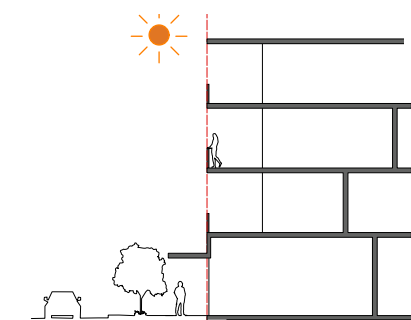


An example of a deep awning providing shade and identity.

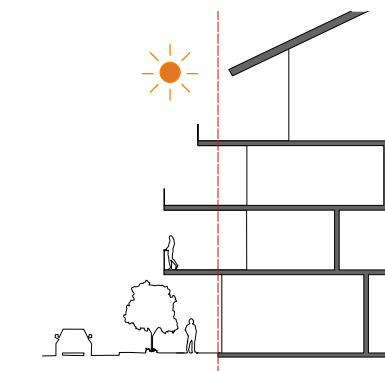
4.2.6 STREET SETBACKS

Development Controls:

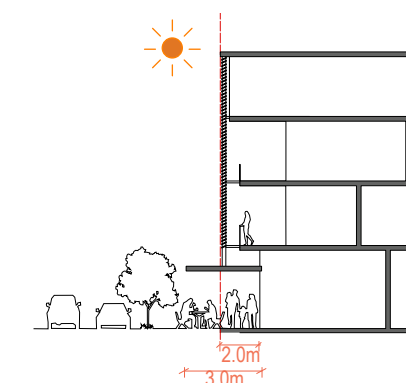
- Ground to third floor portions of any buildings that abut a street or public space must be built to the property boundary of that site. (i.e. zero setback) unless Precinct Plan notates alternative setback.
- Ground floor setbacks to a maximum of 2m to meet the 3m awning requirement, or to accommodate existing street trees and on-street parking will be permissible at the discretion of the Town of Port Hedland.
- Upper level setbacks to a maximum of 2m to incorporate building screening or other architectural detailing will be at the discretion of the Town of Port Hedland.



Buildings in the South Hedland Town Centre must be built to the street boundary.



Above the ground floor, the building wall may be setback, with a balcony or projection and for the provision of screening or other architectural projections..



Ground floor setbacks to a maximum of 2m to meet the 3m awning requirement, or to accommodate existing street trees and on-street parking will be permissible at the discretion of the Town Of Port Hedland.

4.0 DESIGN GUIDELINES

4.2.7 PRIVATE OUTDOOR LIVING

Outdoor living areas need to maximise shade and be open to capture cooling breezes. The southern aspect provides shade for the longest period of time throughout the day. For roofed areas high and low ventilation openings and ceiling fans assist large convection cycles and increase air movement.

Objectives:

- For all residential units to have access to functional and usable private open space.
- For all residents to enjoy an outdoor lifestyle, it is important that outdoor living areas and open space provisions facilitate a cool outdoor environment, without compromising the thermal comfort of indoor areas.

Development Controls:

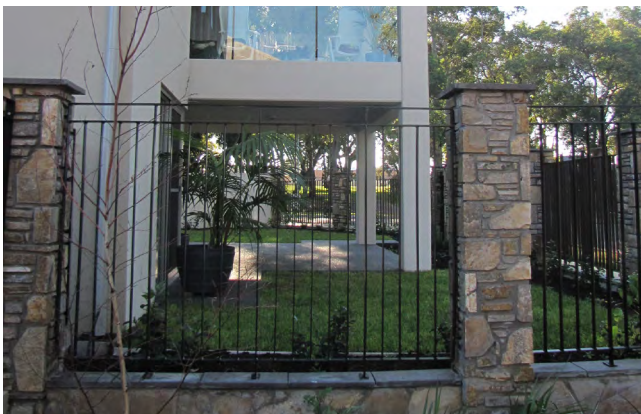
- All ground level dwellings must have an outdoor living area relative to the size of the dwelling, directly accessible from an internal living space, and fully shaded.

<80sqm dwelling	12sqm outdoor space
80-120sqm dwelling	16sqm outdoor space
>120sqm dwelling	20sqm outdoor space

- One primary balcony with a minimum dimension of 2.4m must be included per upper level dwelling, located adjacent to the main living area.

Design Guidance:

- In multi-residential developments, design to maximise the outdoor living areas to face south.
- Shade to outdoor living areas is essential in South Hedland. Where possible, options for vertical shading devices-such as adjustable louvres or screens- to the east and west of outdoor areas are recommended.
- Provide opportunities for outdoor cooking to enable residents to utilise outdoor spaces on hot evenings.
- Ceiling fans encouraged in all shaded outdoor spaces.



An example of an acceptable and well sheltered private outdoor living area.

4.2.8 COMMUNAL OUTDOOR LIVING

Outdoor living areas, communal open space should be designed to maximise shade and be open in order to capture cooling breezes. Confined outdoor spaces can experience heat build up. This can be minimised by shading and avoiding hard surface finishes that increase the ambient air temperature around a building. The use of vegetation that has more growth in the canopy with a clearer understory also assists in channelling breezes through and around a building.

Objectives:

- To ensure that developments incorporate communal outdoor spaces to provide public areas for people to recreate. Private development can contribute to serve Town Centre residents, employees and visitors.

Development Controls:

- Multi-residential developments must include a communal outdoor area equivalent to 5% of the lot area or a minimum of 75m², to be shared by residents. Group dwelling developments to meet TOPH and R-Code requirements.
- Given the high temperatures experienced in South Hedland, effective shade structures need to be provided.

Design Guidance:

- Communal outdoor spaces can be fully designed and constructed as an integral part of the building's design, and include facilities for outdoor cooking.
- Adequate shade to all communal areas through architectural elements and vegetation is encouraged.
- Consider the inclusion of roof decks and gardens, particularly in higher density housing development where private outdoor space is limited.
- Roof gardens can provide highly sought after outdoor living space that offers a different experience from a ground level outdoor space. Planted roofs that are visible from the street can also improve pedestrian experience and soften the higher density built form.



Communal outdoor area providing shade with adequate passive surveillance.

4.0 DESIGN GUIDELINES

4.2 BUILT FORM DESIGN

4.2.9 ADAPTABILITY

Objectives:

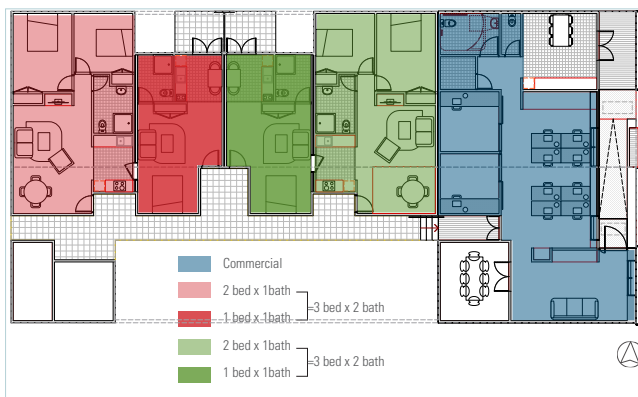
- To ensure that the City Centre has the ability to adapt to the changing needs of the city's population over time.

Development Controls

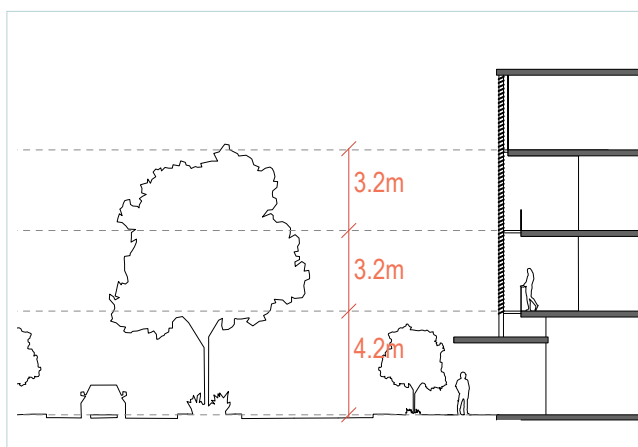
- Any proposed development consisting of 1 bed units must demonstrate how the unit can be adapted into a 2-3 bed unit at a ratio of 1:10 units.
- For mix-use or commercial developments, the street facing building must have a ground floor to first floor height of 4.2m. Buildings not facing the street ground floor to first floor to be 3.2m min.
- Upper levels floor-to-floor measurements must be a minimum of 3.2m for all buildings.

Design Guidance:

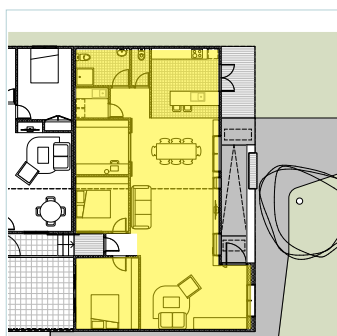
- To allow for residents to 'age in place', consider opportunities for apartments to be easily adapted for universal access. Provision of ramps, increased doorway widths and structural members that allow for the future addition of handrails are recommended. Kitchen and bathroom designs that are adaptable for wheelchair access are also recommended.
- Adaptability of buildings from residential to part-commercial can be considered, and allowances made for changes of use over time.
- Ensuring power and technology connections allow for changes of use to all tenancies will mean that any future upgrades and conversions can be completed with minimal changes (and cost) to the building's infrastructure.



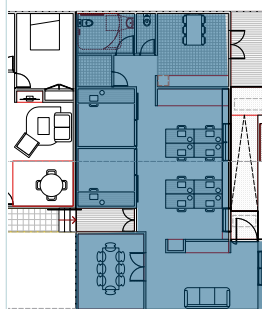
Dual key units



Floor-to-floor levels to all ground floor mix-use and commercial tenancies must be a minimum of 4.2m.



RESIDENTIAL USE



COMMERCIAL (OFFICE) CONVERSION

Consider opportunities to design ground floor residential apartments that enable future commercial adaptation and use.

4.2.10 BICYCLE FACILITIES

Objectives:

- The Town encourages workers to cycle to work, rather than drive. These guidelines are to ensure a bicycle friendly environment.
- To integrate bicycle transport as a key method of transport through the provision of 'end of trip facilities' for cyclists in all commercial, retail and mixed use developments.

Development Controls:

- Bicycle parking must be provided as per:

Residential	1 per 3 dwellings
Residential Visitor	1 per 10 dwellings
Commercial	1 per 500sqm GLA
Commercial Visitor/Courier	1 per 1,000sqm GLA

- Developments are to demonstrate how alternative transport modes have been encouraged, primarily through the provision of End-of-trip facilities such as bike racks, showers and lockers.

Showers	1 per 10 bike bays
Lockers	1 per 2 bike bays

- If multiple commercial tenancies share bike bays, end of trip facilities must be communally accessible.

Design Guidance:

- The Town recommends building on the existing system of pedestrian and bike paths to complete a comprehensive network of shared paths through and around the Town Centre. Private development can contribute to this important initiative by providing bicycle parking and end-of-trip facilities to serve Town Centre residents, employees and visitors.
- Bicycle parking spaces for visitors work best when located in a publicly accessible, sheltered location near the front entrance of a building.
- Bicycle parking spaces for residents and commercial tenants are successful when located in a secure, well-lit location on the ground floor, away from pedestrian traffic.
- Showers, change rooms and lockers are to be well lit and ventilated, capable of being locked from both sides, and located as close as possible to the bicycle parking facilities.
- In residential applications where designated storage space and bicycle facilities are combined its minimum area is 4.5sqm to ensure adequate storage space.



Examples of external and internal end of trip facilities.

4.0 DESIGN GUIDELINES

4.2 BUILT FORM DESIGN

4.2.11 BUILDING SERVICES

Objectives:

- To ensure that services and related hardware required for the function of buildings do not have a negative impact on the character and amenity of the area and are designed to meet changing needs over time.
- To reduce residents reliance on electrical drying appliances by providing alternative zero-energy options.
- To ensure mechanical service equipment does not impact on the visual or acoustic amenity of adjacent uses or the public realm.

Development Controls:

- All piped and wired services, and meters must be contained on the property and concealed from public view.
- All air conditioning condenser units must be contained on the property, concealed from public view from primary and secondary streets.
- All service enclosures and screening treatments must be designed as an integral part of the overall development with landscape treatment of surrounding area.
- Drying areas must be provided to all residential buildings but must not be visible from a street or public pathway.
- Provision must be provided for the collection of waste on-site, including waste storage and area for collection vehicle turning.
- Where a basement is being constructed, waste collection must be from the basement.
- Additional space within the site must be provided for the collection of bulk-waste on council specified days.
- All refuse storage areas must be screened from public view from primary and secondary streets.
- All developments must submit a construction access plan which includes dust management, street tree protection, footpath impact, location of site machinery and materials. All damage will require reinstatement using same materials. Include photo documentation of all verges adjacent to the site.

Design Guidance:

- Some commercial and retail functions will also require drying facilities. Locating these components separately from those provided for residents is highly recommended.
- Additional to the noise and appearance of air conditioning units, the hot air expelled from them can make for an uncomfortable experience when pedestrians or residents are required to walk past the exchange unit. Locating these units separate from any pedestrian activity is highly recommended.



Examples of service enclosures and screening treatments designed as an integral part of the overall development.



Air conditioning condenser units must not be viewed from the street in the Town Centre.

4.3 ENVIRONMENTAL DESIGN

4.3.1 SOLAR DESIGN

Objectives:

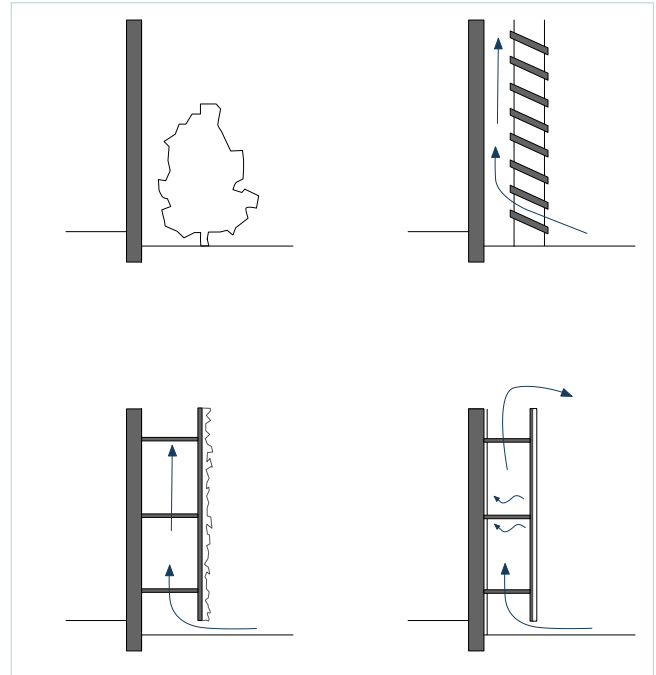
- To ensure buildings in the South Hedland Town Centre incorporate passive solar design principals to optimise shade and prevent unnecessary heat gains, whilst maximising natural daylight levels.

Development Controls:

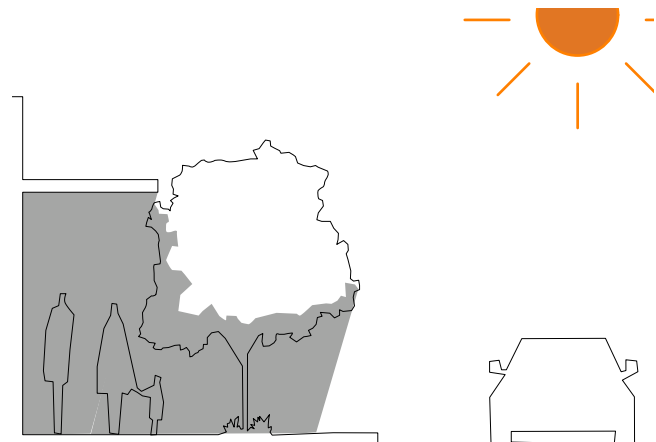
- All glazed openings must be shaded by eaves, verandas, pergolas, awnings, shutters, louvres or projecting balconies of the floor above. Min 600mm projection to all windows and 900mm projection to all doors.
- Screens and/or vertical shading devices must be provided to all east and west glazing.
- North and south facing openings must be provided with a fixed or movable shading device with a minimum 800mm projection.

Design Guidance:

- Shading devices can be designed as an integral part of the building facade, in forms, materials and colours that complement the overall form of the building.
- It is encouraged that east and west facing windows be minimised, as they are difficult to shade.
- Consider also the use of 'comfort glass' or similar to prevent solar gains.
- Protection of windows from the sun can be achieved through architectural devices such as awnings and canopies, and passive solar design, rather than through reflective coatings.
- In addition to providing shade to openings, consider shading walls to reduce the solar heat gain of the building and the surrounding outside area.



Shading to vertical walls can take many forms. Devices which provide shade whilst still allowing cooling ventilation will be the most effective.



The combination of awnings and shade trees will provide the best shade and most comfortable environment for pedestrians on the street.



A combination of shading devices are used to shade both glazing and walls.



Utilising building design by recessing windows is an alternative option for providing shading to glazing.

4.0 DESIGN GUIDELINES

4.3 ENVIRONMENTAL DESIGN

4.3.2 VENTILATION

Objectives:

- To ensure that the design and layout of buildings enhance the thermal comfort of occupants with direct access to cooling fresh air.
- To reduce the reliance on mechanical ventilation and air conditioning, which will reduce energy consumption.

Development Controls:

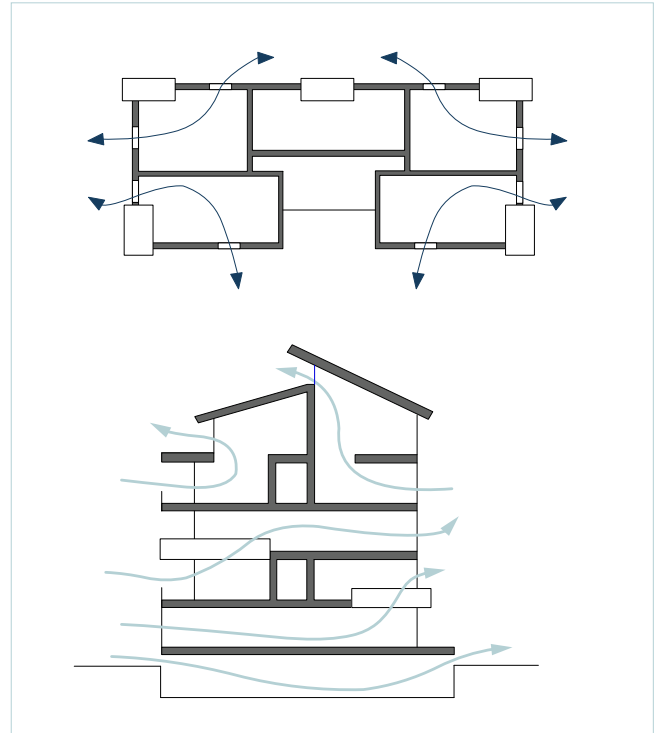
- Roof ventilation is required to all roof spaces.
- Wall openings must be positioned to maximise access to the prevailing northwest breezes and to optimise cross ventilation.
- Residential buildings must provide a minimum of one reversible ceiling fan to each habitable room and functional area of open plan spaces.
- Commercial buildings must provide one reversible ceiling fan per 20sqm of lettable space to a minimum of one per enclosed room.
- Habitable rooms to residential buildings must have at least one operable window/opening on each external wall.
- Fit all doors which contribute to cross ventilation with security screens to ensure cross ventilation is not interrupted over the preference of security.

Design Guidance:

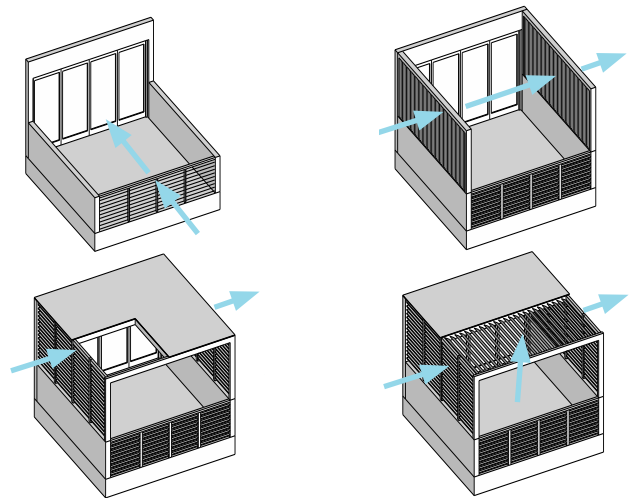
- External doors can be fitted with security screens to enable adequate cross ventilation.
- Residential dwellings can be designed to maximise natural ventilation by orienting their openings to maximise air intake from the 'windward' side of the building, and by providing air outlets on the 'leeward side' of the building.
- Proponents have the potential to utilise both the building's plan and its section to control and direct air flow through both habitable and non-habitable rooms.
- Obstructions and interruptions to the breeze path through a dwelling are encouraged to be minimised in order to increase the effectiveness of cooling breezes.



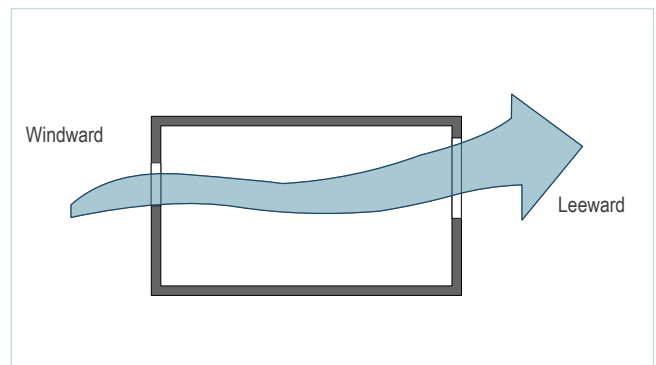
A mixed-use building concept responsive to the Pilbara with room sized balconies, permeable balustrade and roof to maximise the opportunity to purge hot air.



Building designs can allow for natural cooling ventilation in both plan and section.



Balustrade and building design can contribute to best exposure to cooling breezes.



Smaller openings on the windward side of the building and larger openings on the leeward side will encourage the greatest ventilation through a space.

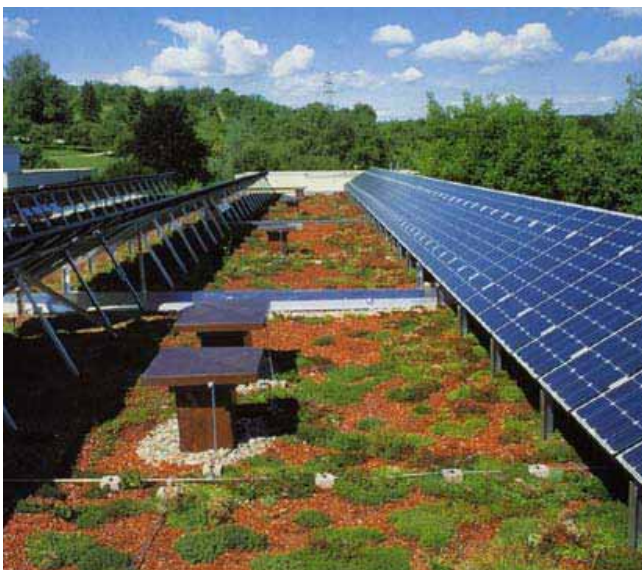
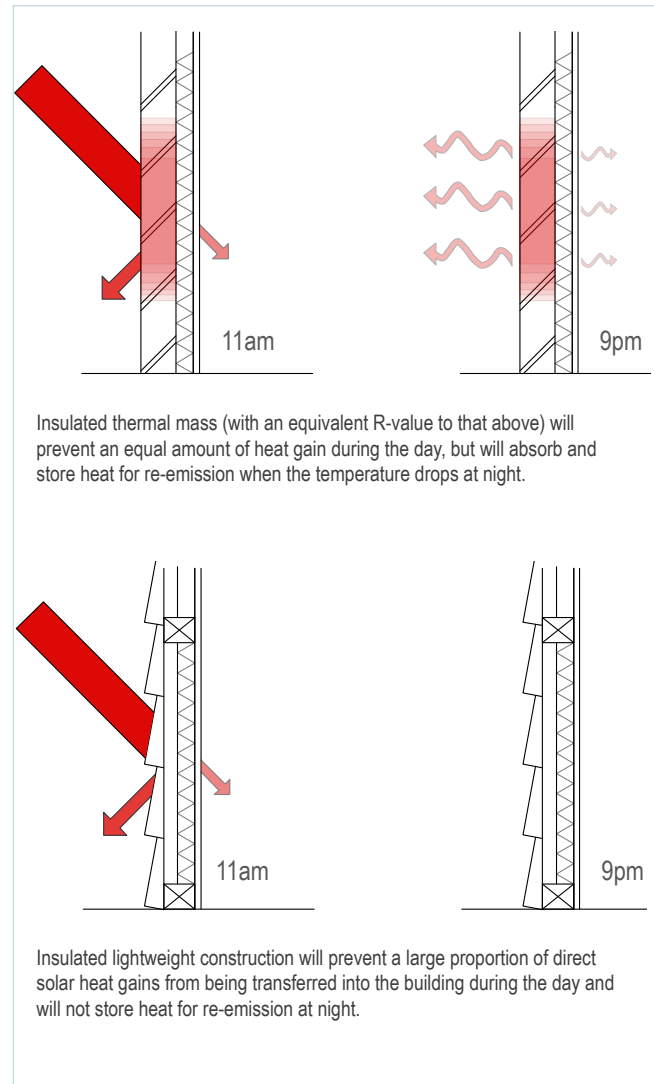
4.3.3 THERMAL EFFICIENCY

Objectives:

- To ensure that every development within the South Hedland Town Centre exhibits superior thermal performance.

Design Guidance:

- The high diurnal range in South Hedland makes it suitable for thermal mass (heavy weight) construction, but the range is not so large to make it the only environmentally responsive option. The extremely hot temperatures experienced in summer also mean that even with a large drop in external temperature at night, internal temperatures in a thermal mass building could fail to drop below a comfortable level. For this reason, designs utilising thermal mass are encouraged to consider shading measures to all walls during the summer months.
- Consider using timber or thermally broken aluminium window frames which conduct less than a third of the heat of typical aluminium frames. Alternatively, uPVC (unplasticised polyvinyl chloride) frames, which are a combination of aluminium outside and timber inside, are recommended.
- Consider using double-glazing, particularly in windows that are exposed to excessive heat gain.
- Consider the use of local indigenous planted roofs, which have excellent thermal qualities and contribute to sustainability objectives through reducing storm water run-off, trapping air pollutants, alleviating heat islands and enhancing biodiversity.
- The way in which the building is used can drastically alter its thermal performance, ensuring that occupants are correctly educated to take advantage of solar design principals.
- Entries with air locks are recommended to minimise the intrusion of outside air into conditioned spaces.



An example of improved efficiency of photovoltaic cells through the use of green roofs which help to reduce the roof temperature increasing photovoltaic cell production by 25%.



An example of insulated lightweight construction with a range of balcony types that also break up the long facade and provides interest with a mix of materials and colours.

4.0 DESIGN GUIDELINES

4.3 ENVIRONMENTAL DESIGN

4.3.4 ENERGY AND APPLIANCES

Objectives:

- To minimise the demand for energy to service buildings through design and orientation and for the proactive use of alternative renewable energy sources.

Design Guidance:

- The installation of renewable energy sources such as photovoltaic panels is recommended to reduce reliance on non-renewable mains power.
- Evacuated tube solar hot water system or heat pump solar hot water systems are encouraged to be installed for all residential tenancies and commercial tenancies larger than 200sqm.
- Reduce energy use by installing high efficiency refrigerators, freezers, dishwashers and washing machines.
- Ensure the efficiency of all A/C systems by designing them to target only essential spaces, with the ability to be zoned off from non-essential spaces.
- Consider installing a single switch to turn off all non-essential appliances when leaving the building.

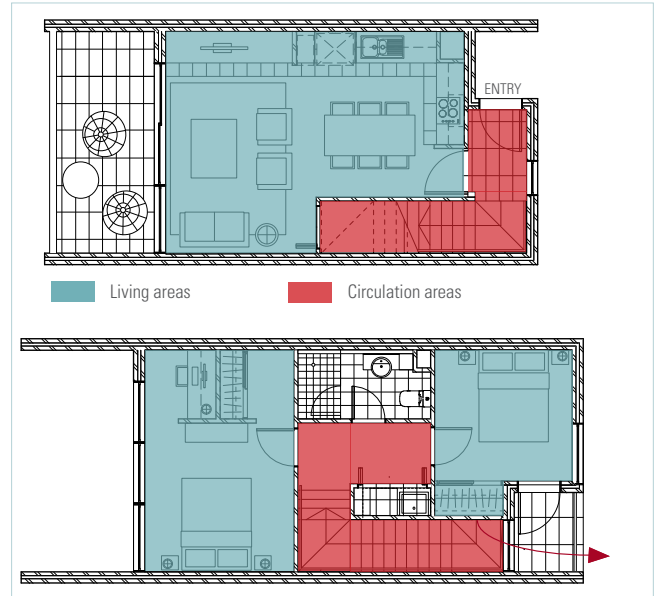
4.3.5 PLUMBING AND FIXTURES

Objectives:

- To ensure that all buildings within the South Hedland City Centre are using measures to reduce consumption of mains potable water to prevent wastage.

Design Guidance:

- The National Construction Codes (NCC) ensures that all buildings install fixtures that meet a minimum standard of water use (WELS rating). Using plumbing fixtures with a WELS rating greater than that required by the NCC will further improve water efficiencies.
- Consider location and size of all required fire fighting systems and equipment in the early planning phase as per Australian Standards and NCC to ensure services are integrated with the overall design and form of proposed developments.



Design living areas that can be separated from the circulation spaces for more efficient use of mechanical (active) cooling systems.



Roof mounted photovoltaic cells.



An example of fire hydrant booster well integrated into the building design.



An example of the fire hydrant booster with a poorly designed outcome.

4.3.6 WATER RECYCLING

Objectives:

- To encourage the recycling and re-use of greywater to reduce reliance on mains water supply.

Development Controls:

- Any water recycling approaches should be developed and implemented in accordance with Stormwater Management Manual of Western Australia.

Design Guidance:

- Consider the installation of a greywater recycling system in all new buildings within the South Hedland Town Centre.

NOTE: All greywater use is subject to the current 'Code of Practice for the Reuse of Greywater in Western Australia' document produced by the Western Australian Health Department, and proponents should ensure that all greywater systems are compliant with this document.



An existing good example of controlling overflow through simple wall detailing in a public park in Port Hedland.

4.3.7 WATER MANAGEMENT

Objectives:

- To ensure water sensitive Urban Design (WSUD) principles are employed throughout the site, to manage stormwater from roads and open space.

Development Controls:

- Lots must provide for the detention of 16mm of rainfall (based on the lot area) on site – which is equivalent to approximately 60% of the 1-year 1-hour storm event. Where not used for re-use and subject to the particular site and receivable point this detained runoff may be slowly released via a low flow outlet to the road drainage or open drain system.
- Stormwater disposal to be in accordance with approved Development Plan and the Town of Port Hedland's local planning policy to ensure adequate retention on site, disposal from any basement parking area and connection to local/district stormwater system.
- Any water recycling approaches should be developed and implemented in accordance with Stormwater Management Manual of Western Australia.

Design Guidance:

- Considered plumbing design can allow for the provision of rainwater for specific internal uses, with an automatic diversion valve which switches to mains water whenever the tank is empty.



An example of stormwater detention within a lot. Appropriate design to address the heavy deluges of rain during the cyclone season is required.



An example of controlling and minimising overflow and flooding through simple detailing, in this instance it allows for overflow from a small courtyard.

4.0 DESIGN GUIDELINES

4.3 ENVIRONMENTAL DESIGN

4.3.8 WASTE MANAGEMENT

Objectives:

- Provide for efficient, practical and safe waste collection that is easily serviced by collection crews.
- To encourage recycling to reduce waste and lower the environmental impact of new buildings.
- Ensure all residents and business operators are provided with hygienic waste storage, collection and sorting of waste.
- Ensure the amenity of the South Hedland Town Centre is not adversely affected by noise, odour, hygiene, traffic disruption, visual impact or illegal dumping.
- Permit easy transfer of bins to the Bin Collection area (where required).
- Encourage the incorporation of designing out crime principles into waste management.

Development Controls:

- No skip bins are permitted within the South Hedland Town Centre other than for construction and subject to approval through a Construction Site Management Plan.
- On – street, standard service bin collection is not supported within the South Hedland Town Centre.
- Bin Collection areas shall be designed in accordance with the Town of Port Hedland Health Local Law.
- A Waste Management Plan is required to be submitted and approved prior to a Development Application approval being issued.
- A Waste Management Plan may indicate that a private waste operator will service the development. In this event it is advised the Town's requirements for waste collection are followed to ensure that the Town is able to service the development should contract conditions change.
- The location of vehicle access points, including location to road, crossover sizes and vehicle movements are required to be approved by the Manager Technical Services.

Design Guidance:

- Early consultation with the Town's Coordinator of Waste and Project Operations to discuss specific requirements for local waste services is essential to developing better practise waste management systems.
- Better practise waste management can help to maintain a development's aesthetic appeal and efficient management.
- For residential and mixed use developments consideration should be given to providing space within the development for residents to temporarily store unwanted bulky items, while awaiting disposal.
- Locating Bin Storage and Collection areas far enough away from private residences will reduce the impact of noise during bin use and waste collection, as well as minimise any potential impacts from odours.

- Eliminating the need for collection vehicles to reverse will reduce the noise impact on private residents.
- CCTV should be installed overlooking bin collection areas to avoid illegal dumping.
- A preliminary Occupational Health, Safety and Environment (OHSE) risk and hazard analysis should be undertaken during the design phase to identify any potential risks to health and safety associated with the proposed services and design layout.
- Consider the use of recycled or recyclable materials in all aspects of construction, landscape and fit-out stages of the project.
- Choose construction system(s) based on environmental impact and life cycle costs, including durability and maintenance requirements, life cycle energy consumption, adaptability and recycling potential, local availability of materials and transportation distances.
- Where a development is a refurbishment or renovation of an existing building, consider incorporating existing building elements into new construction.
- Integrate waste management processes into design stages of the project, including using standard component sizes to reduce waste, and selecting materials and components on durability, adaptability and ease of future services upgrades.



4.0 DESIGN GUIDELINES

4.4 LANDSCAPE DESIGN

The use of vegetation for shading is particularly effective on the east and west facades where eave overhangs do not prevent solar penetration. Landscaping has to be able to withstand the normal cyclic storm events as such strong root systems need to be established.

4.4.1 BIO-DIVERSITY

Objectives:

- To ensure that new developments do not interfere with the existing biodiversity or habitat of native flora and fauna.
- To encourage the use of native flora, thus expanding the habitat for local fauna such as bird and insect life.

Development Controls:

- A minimum of 60% of all planting must be selected from the Recommended Planting List on page 30-31.

Design Guidance:

- Local native plants thrive in the harsh environmental conditions experienced in South Hedland. For this reason they are both a logical and environmentally considerate choice for planting.
- Many exotic species will thrive in the South Hedland conditions, but can potentially have detrimental impacts on the balance of existing flora and fauna in the area and on natural waterways. These are to be carefully selected to minimise these risks.

4.4.2 WATERING

Objectives:

- To ensure water efficiency measures are taken to reduce consumption of potable water on gardens.

Design Guidance:

- Smart approved WaterMark products are recommended for use in the garden, in particular, hose connectors, rain sensors, soil moisture monitors and sprinkler systems.
- Consider installing a dripper or subsurface delivery system to minimise evaporation.

4.4.3 'SOFTSCAPE' ELEMENTS

Objectives:

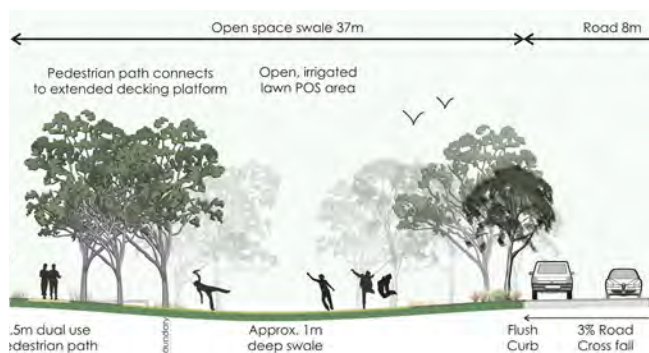
- To provide ample shade to encourage the ongoing use of outdoor spaces throughout the year, and at different times of the day.
- To ensure proposed landscape areas do not provide opportunities for anti-social behaviour.

Development Controls:

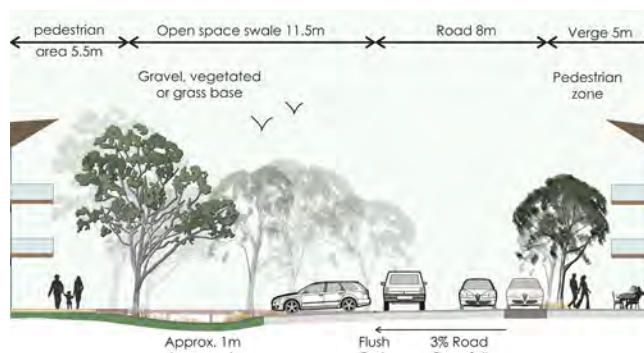
- Shade must be provided to walkways and sitting places.
- For pedestrian access paths and passive recreation areas, landscaping must be provided.
- Areas of lawn cover must be confined to specific usable areas only.
- All planting areas must be mulched (either organic or gravel) to a minimum 50mm (gravel) or 100mm (organic) deep.
- Crackerdust is not permitted to be used as garden mulch, or in any communal area.
- Landscape areas should not provide concealment or entrapment areas.
- All planting areas located with access to the public (e.g. street setbacks) are not to utilise gravel mulch.
- The design of landscaped areas are not to provide opportunities for anti-social behaviour.

Design Guidance:

- Provide as much permeable surface area on-site as possible and include drainage options such as dry creek bed features, garden swales and retention and overflow areas, wherever practicable.
- Planting islands can be designed as natural drainage swales, allowing run-off from parking lots to irrigate trees and understorey planting. Swales can be planted with native grasses and shrubs that contribute to the purification of the run-off.
- Any water features included in the landscape design can ensure constant movement of water surface to prevent mosquito breeding grounds.



Swale beautification concept for South Hedland.



Swale beautification concept for South Hedland.

4.4.4 HARDSCAPE ELEMENTS

Hard stand areas must be designed so that heat retention and re-radiation is minimised so the increase in ambient air temperature around buildings is contained.

Objectives:

- To ensure the provision of durable hardscape treatments that contribute to the City area and support secure and functional outdoor spaces.

Development Controls:

- Seating, bollards, rubbish bins and other furnishings of open spaces must be of a robust, contemporary style that complements the street furniture of the public environment.
- Paving materials must be robust, high quality, easily maintained and integrated into the overall character of the development.
- In order to minimise reflected heat load, external paving abutting the building must have substantial shading by eaves, awnings or landscaping.
- All proposed seating, bollards, rubbish bins and other furnishings visible from the public realm to be approved by council.

Design Guidance:

- Consider using readily available segmented paving materials to allow easy access to underground services and cost-effective replacement in the event of damage or discolouration.
- Break-up carpark expanses into smaller zones by using vegetation and shade. This will also reduce heat build-up within carparks, reducing the effect of these areas upon the City's "heat island".
- Consider engaging local artists in the design of hardscape elements to provide opportunities to create a uniquely local expression in the Town Centre.



Trees and shade structures will assist in minimising reflected heat load. Choose Seating, bollards, rubbish bins and paving for open spaces that are robust and complements the South Hedland Town Centre public environment - Wise Terrace, South Hedland.

4.4.5 SCREENS AND FENCES

Objectives:

- To provide adequate boundary security to all properties, whilst providing an open and inviting face to visitors.
- To limit opportunities for concealment of intruders by ensuring planting and screening allows for passive surveillance of property boundaries.

Development Controls:

- Vegetation must be located to maintain clear view-lines between activity areas in buildings and open spaces and parking lots.
- All fencing which abuts public open space, including a street must be maximum 1.2m high.
- Where access must be physically denied, visually permeable fencing is to be used to a maximum 2.1m high. This fencing is not to provide footholds or other climbing aids.
- Cyclone fencing, razor wire and 'panel' fencing (Colorbond or fibre cement) must not be used within the City Centre precinct.

Design Guidance:

- Permeable fencing often provides greater security than solid walls as the opportunities for concealment are reduced.
- Select high branching tree species for potential problem areas and prune mature trees to a minimum of 1.8 metres above grade to maintain view-lines and maximise surveillance.
- Use low planting beds or local grasses (600mm maximum height) on the perimeter of a property, with taller shrubs and dense cover trees located in the middle or rear of internal courtyards and garden spaces.



Permeable fencing provides passive surveillance opportunities for this group dwelling development in Port Hedland.

4.0 DESIGN GUIDELINES

4.4 LANDSCAPE DESIGN

4.4.6 RECOMMENDED PLANT LIST

SCIENTIFIC NAME	COMMON NAME
EXOTIC STREET TREES	
<i>Brachychiton gregorii</i>	<i>Desert Kurrajong</i>
<i>Delonix regia</i>	<i>Poinciana</i>
<i>Ficus microcarpa</i> var. <i>hillii</i>	<i>Hill's Weeping Fig</i>
<i>Tipuana tipu</i>	<i>Pride of Bolivia, Rosewood</i>
NATIVE STREET TREES	
<i>Corymbia terminalis</i>	<i>Bloodwood, Desert Bloodwood</i>
<i>Eucalyptus victrix</i>	<i>Coolibah, Black heart Gum</i>
<i>Melaleuca dealbata</i>	<i>Karnbor</i>
<i>Melaleuca leucadendra</i>	<i>Cadjeput</i>
<i>Mimusops elegi</i>	<i>Walara</i>
<i>Terminalia canescens</i>	<i>Wingnut Tree, Native Almond</i>
SHADE TREES	
<i>Acacia aneura</i>	<i>Mulga</i>
<i>Acacia tumida</i>	<i>Pindan Wattle</i>
<i>Corymbia aspera</i>	<i>Brittle Bloodwood</i>
<i>Corymbia dichromophloia</i>	<i>Variable Barked Bloodwood</i>
<i>Corymbia flavescens</i>	-
<i>Corymbia opaca</i>	-
<i>Eucalyptus camaldulensis</i>	<i>River Gum</i>
<i>Melaleuca argentea</i>	<i>Silver Cadjeput, paperbark</i>
<i>Owenia reticulata</i>	<i>Native Walnut, Desert Walnut</i>
<i>Pittosporum phylliraeoides</i>	-

SCIENTIFIC NAME	COMMON NAME
SMALL TREES	
<i>Acacia coriacea</i>	<i>Wirewood</i>
<i>Acacia pyrifolia</i>	<i>Kanji Bush</i>
<i>Bauhinia cunninghamii</i>	-
<i>Corymbia deserticola</i>	<i>Desert Bloodwood</i>
<i>Corymbia zygomphylla</i>	-
<i>Dolichandrone heterophylla</i>	<i>Lemonwood</i>
<i>Eucalyptus leucophloia</i>	<i>Snappy Gum</i>
<i>Hakea lorea</i>	<i>Corkwood, Witinti</i>
<i>Melaleuca lasiandra</i>	

SCIENTIFIC NAME	COMMON NAME
LARGE SHRUBS	
<i>Acacia acradenia</i>	-
<i>Acacia ancistrocarpa</i>	<i>Fitzroy wattle</i>
<i>Acacia bivenosa</i>	<i>Dune Wattle</i>
<i>Acacia coleii</i>	-
<i>Acacia pyrifolia</i> DC. var. <i>pyrifolia</i>	-
<i>Acacia trachycarpa</i>	<i>Minni Ritchi</i>
<i>Acacia tumida</i> var. <i>Pilbarensis</i>	-
<i>Alyogyne hakeifolia</i>	<i>Native Hibiscus</i>
<i>Capparis spinosa</i>	<i>Caper Bush</i>
<i>Crotalaria cunninghamii</i>	<i>Green birdflower tree</i>
<i>Eremophila fraseri</i>	<i>Burra, Native Fuchsia, Turpentine bush</i>
<i>Eremophila glabra</i>	<i>Tar Bush</i>
<i>Eremophila maculata</i>	<i>Spotted Emu bush</i>
<i>Eremophila pterocarpa</i>	<i>Silver Poverty Bush</i>
<i>Grevillea eriostachya</i>	<i>Yellow Flame Grevillea, Desert grevillea</i>
<i>Grevillea wickhamii</i>	<i>Wickham's Grevillea</i>
<i>Santalum lanceolatum</i>	<i>Northern Sandalwood</i>
<i>Senecio magnificus</i>	<i>Showy Groundsel</i>
<i>Senna artemisioides</i>	<i>Silver Cassia</i>
<i>Senna artemisioides</i> ssp. <i>x sturtii</i>	<i>Crey Cassia</i>



Myoporum parvifolium, Creeping Boobialla

SCIENTIFIC NAME	COMMON NAME
SMALL SHRUB	
<i>Acacia adoxa</i>	-
<i>Acacia hilliana</i>	<i>Tabletop Acacia</i>
<i>Acacia wickhamii</i>	-
<i>Atriplex bunburyana</i>	<i>Silver Salt Bush</i>
<i>Capparis spinosa</i>	<i>Common Caper</i>
<i>Corchorus walcottii</i>	<i>Wooly Corchorus</i>
<i>Gomphrena canescens</i>	<i>Bachelors Buttons</i>
<i>Halgania</i> sp.	-
<i>Maireana georgei</i>	<i>Satiny Bluebush</i>
<i>Pimelea ammodaridifolia</i>	-
<i>Ptilotus calostachyus</i>	<i>Weeping Mulla Mulla</i>
<i>Ptilotus exaltatus</i>	<i>Pink Mulla Mulla</i>
<i>Ptilotus rotundifolius</i>	<i>Royal Mulla Mulla</i>
<i>Scaevola browniana</i>	-
<i>Scaevola parvifolia</i>	<i>Camel Weed</i>
<i>Senna notabilis</i>	-
<i>Solanum lasiophyllum</i>	<i>Flannel Bush</i>
<i>Swainsona formosa</i>	<i>Sturt desert Pea</i>
<i>Tecticornia auriculata</i>	-
<i>Teucrium racemosum</i>	<i>Grey Germander</i>

SCIENTIFIC NAME	COMMON NAME
GROUNDCOVER	
<i>Acacia adoxa</i> var. <i>subglabra</i> Pedley	-
<i>Acacia gregorii</i>	
<i>Canavalia rosea</i>	<i>Coastal Canavalia Coastal Jack bean</i>
<i>Diplopeltis stuartii</i>	<i>Desert pepperflower</i>
<i>Enchylaena tomentosa</i>	<i>Barrier Saltbush</i>
<i>Indigofera boviparda</i>	-
<i>Ipomea muellerii</i>	<i>Poison Morning Glory</i>
<i>Ipomoea pes-caprae</i> subsp. <i>Brasiliensis</i>	<i>Prostrate</i>
<i>Myoporum parvifolium</i>	<i>Creeping Boobiolla</i>
<i>Polymeria ambigua</i>	<i>Morning Glory</i>
<i>Ptilotus appendiculatus</i>	-
<i>Ptilotus arthrolasius</i>	-
<i>Ptilotus axillaris</i>	<i>Matt Mulla Mulla</i>
<i>Swainsona formosa</i>	<i>Sturt's Desert Pea</i>
<i>Tribulus hirsutus</i>	<i>Desert Pea</i>

SCIENTIFIC NAME	COMMON NAME
GRASSES	
<i>Cyperus vaginatus</i>	<i>Stiff leaf sedge</i>
<i>Cymbopogon ambiguus</i>	<i>Scent (Lemon) Grass</i>
<i>Spinifex longifolius</i>	<i>Beach spinifex</i>
<i>Triodia epactia</i>	-
<i>Triodia intermedia</i>	<i>Lobed Spinifex</i>
<i>Triodia pungens</i>	<i>Soft spinifex, gummy spinifex</i>
<i>Triodia schinzii</i>	<i>Feathertop spinifex</i>



Ptilotus exaltatus, Pink Mulla Mulla.



Swainsona formosa, Sturt Desert Pea.



PRECINCT PLANS

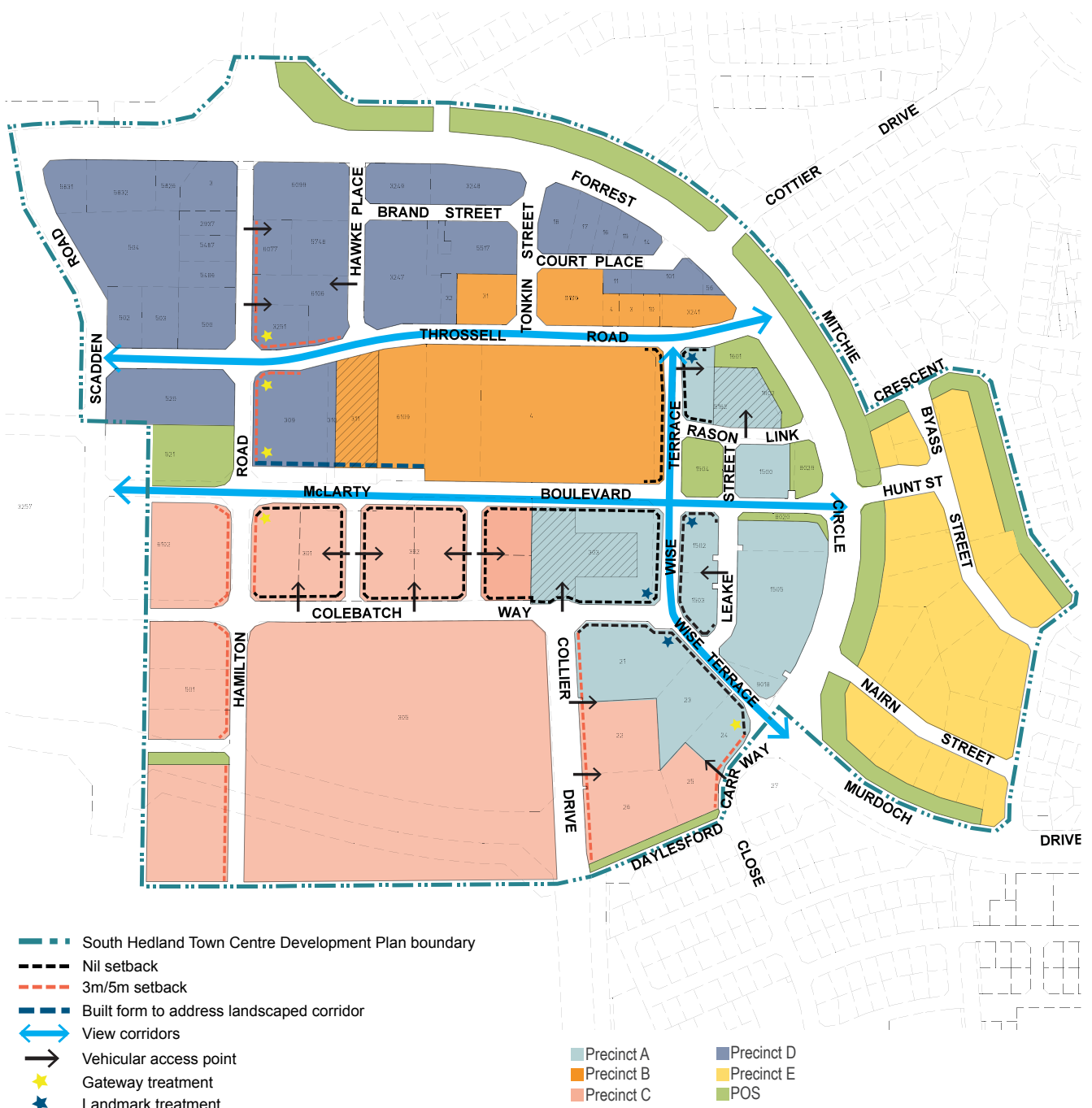
This section of the Design Guidelines provides the detailed development requirements for each precinct area in the Town Centre. These requirements include site setbacks, landmarks, gateways, orientation and vehicle access. For the most part, they are mandatory and applicants are required to confirm that they have been addressed when completing the Design Guidelines Checklist.



PRECINCT PLAN

PRECINCT PLAN STRATEGY

The following primarily outlines the Development Controls applicable to the new development sites in the South Hedland Town Centre. Where redevelopment of existing lots are proposed (i.e. redevelopment of those lots which are not subject to Development Controls illustrated on the Precinct Plan), applicants are encouraged to liaise with the Town of Port Hedland during the design phase to ensure the land use and built form contribute to delivering the vision outlined by the South Hedland Town Centre Development Plan.



SETBACKS

Nil Setback:

Development on lots notated as having a nil setback on the Precinct Plan require:

- Ground to third floor portions of any building that abut a street must be built to the property boundary of that site.
- Ground floor setbacks to a maximum of 2m, to either accommodate a 3m awning or to accommodate existing street trees and on-street parking (which may be permissible at the discretion of the Town of Port Hedland).
- Upper floor setbacks to a maximum of 2m that incorporate building screening or other architectural detailing may be permissible at the discretion of the Town of Port Hedland.

3m/5m Setback:

Development on lots notated as having a 3m/5m setbacks on the Precinct Plan require:

- Maximum street setback of 3m to the ground floor for a minimum of 75% of the frontage to assist in creating a consistent streetscape.
- Maximum setback of 5m to upper floors.

LANDMARKS, GATEWAYS AND ORIENTATION

Landmark Treatment:

Development on lots notated as requiring a landmark treatment are to include architectural treatments that maintain and enhance the key view corridors in the Town Centre. Treatments may include freestanding objects or artworks such as a sculpture, clock tower or interpretive signage column. Inflections in building height that break the roof line of a building, or indentations in the building facade that create space for a special sidewalk activity or landscape treatment can also be utilised.

Gateway Treatment:

Development on lots notated as requiring gateway treatment are to include architectural treatments that assist in identifying the entry to the South Hedland Town Centre. Particular emphasis is to be focused on ensuring the various design controls and design guidance are substantially implemented through the built form.

Orientation:

Development on the northern side of McLarty Boulevard and noted as 'built form to address landscaped corridor' is to orientate and integrate with the landscaped drainage corridor along McLarty Boulevard, achieved through the position of major openings, integrated pedestrian path networks, facade treatments etc.

VEHICULAR ACCESS

The preferred vehicular access points have been illustrated in the Precinct Plan adjacent to indicate the preferred position of crossovers and vehicular entry points. Where possible, crossovers and vehicular access is to be shared on adjoining lots as illustrated on the Precinct Plan to minimise the number of crossovers and assist in developing a continuous built form.



CHECKLIST



CHECKLIST

LOT NO.

MARK Y (YES) N (NO) OR N/A (NOT APPLICABLE) ACCORDING TO WHETHER YOUR PROPOSAL COMPLIES WITH THE ASSOCIATED CHECKLIST ITEMS BELOW. ALTERNATIVELY, IF PROPONENT BELIEVES THE RELEVANT OBJECTIVES NOTED IN THE DESIGN GUIDELINES CAN BE MET IN AN ALTERNATIVE WAY, MARK THE P (PERFORMANCE) COLUMN.

	Y	N	N/A	P	COMMENTS
4.1 URBAN DESIGN					
4.1.1 SAFETY AND SURVEILLANCE					
Passive surveillance and physical security measures must be provided to all buildings by providing windows and elevation elements facing pedestrian access ways, public open space, primary streets and laneways.					
4.1.2 ACOUSTIC SEPARATION					
Noise generating services such as air conditioning units must be remotely located or utilise noise control measures to minimise noise impacts on adjacent users.					
4.1.3 LIGHTING					
All lighting proposals as per Australian Standards.					
All outdoor, car park or security lighting is to be directed downwards with no light spill above the horizontal plane.					
Building entrances must be well lit for identity and safety.					
Feature lighting must be integrated into the design of the project.					
External light fixtures must be robust, vandal resistant and complementary to the design character of the affected building or open space.					
4.1.4 SIGNAGE					
Signage shall be addressed as a condition of planning approval and shall be subject to any council signage policy or local law.					
4.1.5 PEDESTRIAN FRIENDLY STREETS					
Awnings must be provided to Ground Floor commercial developments with a minimum width of 3.0m and minimum height above ground level of 3.5m to the underside.					
Awnings must be designed with regard to the existing street lighting and trees installed within the road reserve.					
4.1.6 VEHICLE PARKING					
Ensure all car parking areas proposed as part of any new development are provided with surveillance.					
Ensure all loading and unloading areas are well lit.					
Parking, including visitor parking, must be designed and constructed as per the Local Planning Scheme and Council's guidance.					
Any public on-street parking that is removed as part of a development shall be provided on-site and in an area with public access or via a cash-in-lieu payment system.					
Where car parking is provided at grade and is not covered by a roof, shade trees must be provided in the ratio of at least one (1) for every four (4)-car bays- rounded up to the nearest whole tree where necessary.					
Upper deck parking must be shaded by a roof or shade structure, or include shade trees as per at-grade parking requirements.					
Trees planted in the urban environment should be installed as per clause 6.3.4.1 Trees in Paved Areas of the IPWA Guidelines for Subdivisional Development.					
Disabled parking shall be provided in accordance with Australian Standards.					
Parking for uses other than the predominant use must be from the rear of the building.					
Locate parking to the rear of the lot.					

	Y	N	N/A	P	COMMENTS
4.1.7 PUBLIC ARTWORK					
All public artwork proposals to be in line with the Town of Port Hedland Interim Public Art Strategy 2013.					
4.2 BUILT FORM DESIGN					
4.2.1 FACADES					
Ground floor levels should provide strong activation facing onto the streetscape. Large blank walls are not permitted.					
Buildings over 4 storeys must be articulated to define base, middle and top sections, with each composed in relation to the overall proportions of its façade.					
Elevations must be articulated to differentiate between units and break down long facades.					
Balconies (whether primary or secondary) are mandatory on all street-facing residential facades. Refer to PRIVATE OUTDOOR SPACE for minimum size controls.					
4.2.2 BUILDING CORNERS					
Buildings at corners must address both street frontages.					
Corner buildings must be given strong architectural expression at street level and exhibit a greater level of design within the urban context.					
Where a landmark or gateway is created through building form, it must be designed as an integral part of the architectural composition and detailing of the building.					
Blank walls to corner frontages are not permitted.					
4.2.3 ROOF FORMS					
Any roof-mounted building services must be integrated into the design of the roof and must not be visible from the public realm. This can include lift overruns, roof-mounted air conditioning units, media services.					
Use roof forms to identify individual units within a block of attached buildings. This will assist in breaking down the horizontal scale of long facades.					
4.2.4 MATERIALS					
Materials must be chosen for their durability, robustness and appreciation of the environmental conditions of South Hedland and its location within a cyclone Region D.					
Corrugated steel must not be used as a main wall cladding material, however use as a feature is permitted.					
Colours must be selected to reflect the local environment and reduce heat absorption, avoiding dark, heat absorbing and very light, highly reflective colours					
Facades of buildings that face the street must not use highly reflective materials.					
4.2.5 BUILDING ENTRANCES					
Building entrances shall be well lit for identity and safety.					
Coordinate the location of building entries with features of the external environment, including crosswalks, traffic signs, sidewalk amenities and street tree planting.					
Building entries must be designed as integral and identifiable elements of the building facade and must be clearly visible from roadways and footpaths.					
Individual entries from the footpath must be provided to all ground level residential and commercial tenancies addressing the street.					

	Y	N	N/A	P	COMMENTS								
Separate entries must be provided for vehicles and pedestrians, and for different types of uses in a building.													
Where not on the primary street, entries must be provided with shelter, using built shade or shade trees.													
4.2.6 STREET SETBACKS													
Ground to third floor portions of any buildings that abut a street or public space must be built to the property boundary of that site. (i.e. zero setback) unless Precinct Plan notates alternative setback.													
Ground floor setbacks to a maximum of 2m to meet the 3m awning requirement, or to accommodate existing street trees and on-street parking will be permissible at the discretion of the Town of Port Hedland.													
Upper level setbacks to a maximum of 2m to incorporate building screening or other architectural detailing will be at the discretion of the Town of Port Hedland.													
4.2.7 PRIVATE OUTDOOR LIVING													
All ground level dwellings must have an outdoor living area relative to the size of the dwelling, directly accessible from an internal living space, and fully shaded.													
<table border="1"> <tr> <td><80sqm dwelling :</td> <td>12sqm outdoor space</td> </tr> <tr> <td>80-120sqm dwelling :</td> <td>16sqm outdoor space</td> </tr> <tr> <td>>120sqm dwelling:</td> <td>20sqm outdoor space</td> </tr> </table>	<80sqm dwelling :	12sqm outdoor space	80-120sqm dwelling :	16sqm outdoor space	>120sqm dwelling:	20sqm outdoor space							
<80sqm dwelling :	12sqm outdoor space												
80-120sqm dwelling :	16sqm outdoor space												
>120sqm dwelling:	20sqm outdoor space												
One primary balcony with a minimum dimension of 2.4m must be included per upper level dwelling, located adjacent to the main living area.													
4.2.8 COMMUNAL OUTDOOR LIVING													
Multi-residential developments must include a communal outdoor area equivalent to 5% of the lot area or a minimum of 75m ² , to be shared by residents. Group dwelling developments to meet TOPH and R-Code requirements.													
Given the high temperatures experienced in South Hedland, effective shade structures need to be provided.													
4.2.9 ADAPTABILITY													
Any proposed development consisting of 1 bed units must demonstrate how the unit can be adapted into a 2-3 bed unit at a ratio of 1:10 units.													
For mix-use or commercial developments, the street facing building must have a ground floor to first floor height of 4.2m. Buildings not facing the street ground floor to first floor to be 3.2m min.													
Upper levels floor-to-floor measurements must be a minimum of 3.2m for all buildings.													
4.2.10 BICYCLE FACILITIES													
Bicycle parking must be provided as per:													
<table border="1"> <tr> <td>Residential</td> <td>1 per 3 dwellings</td> </tr> <tr> <td>Residential Visitor</td> <td>1 per 10 dwellings</td> </tr> <tr> <td>Commercial</td> <td>1 per 500sqm GLA</td> </tr> <tr> <td>Commercial Visitor/Courier</td> <td>1 per 1,000sqm GLA</td> </tr> </table>	Residential	1 per 3 dwellings	Residential Visitor	1 per 10 dwellings	Commercial	1 per 500sqm GLA	Commercial Visitor/Courier	1 per 1,000sqm GLA					
Residential	1 per 3 dwellings												
Residential Visitor	1 per 10 dwellings												
Commercial	1 per 500sqm GLA												
Commercial Visitor/Courier	1 per 1,000sqm GLA												

	Y	N	N/A	P	COMMENTS				
Developments are to demonstrate how alternative transport modes have been encouraged, primarily through the provision of End-of-trip facilities such as bike racks, showers and lockers.									
<table border="1"> <tr> <td>Showers</td> <td>1 per 10 bike bays</td> </tr> <tr> <td>Lockers</td> <td>1 per 2 bike bays</td> </tr> </table>	Showers	1 per 10 bike bays	Lockers	1 per 2 bike bays					
Showers	1 per 10 bike bays								
Lockers	1 per 2 bike bays								
If multiple commercial tenancies share bike bays, end of trip facilities must be communally accessible.									
4.2.11 BUILDING SERVICES									
All piped and wired services, and meters must be contained on the property and concealed from public view.									
All air conditioning condenser units must be contained on the property, concealed from public view from primary and secondary streets.									
All service enclosures and screening treatments must be designed as an integral part of the overall development with landscape treatment of surrounding area.									
Drying areas must be provided to all residential buildings but must not be visible from a street or public pathway.									
Provision must be provided for the collection of waste on-site, including waste storage and area for collection vehicle turning.									
Where a basement is being constructed, waste collection must be from the basement.									
Additional space within the site must be provided for the collection of bulk-waste on council specified days.									
All refuse storage areas must be screened from public view from primary and secondary streets.									
All developments must submit a construction access plan which includes dust management, street tree protection, footpath impact, location of site machinery and materials. All damage will require reinstatement using same materials. Include photo documentation of all verges adjacent to the site.									
ENVIRONMENTAL DESIGN									
4.3.1 SOLAR DESIGN									
All glazed openings must be shaded by eaves, verandahs, pergolas, awnings, shutters, louvres, or projecting balconies of the floor above. Min 600mm projection to all windows and 900mm projection to all doors.									
Screens and/or vertical shading devices must be provided to all areas of east and west glazing.									
North and south facing openings must all be provided with a fixed or movable shading device with a minimum 800mm projection.									
4.3.2 VENTILATION									
Roof ventilation is required to all roof spaces.									
Wall openings must be positioned to maximise access to the prevailing northwest breezes and to optimise cross ventilation.									
Residential buildings must provide a minimum of one reversible ceiling fan to each habitable room and functional area of open plan spaces.									

	Y	N	N/A	P	COMMENTS
Commercial buildings must provide one reversible ceiling fan per 20sqm of lettable space to a minimum of one per enclosed room.					
Habitable rooms to residential buildings must have at least one operable window/ opening on each external wall.					
Fit all doors which contribute to cross ventilation with security screens to ensure cross ventilation is not interrupted over the preference of security.					
4.3.6 WATER RECYCLING					
Any water recycling approaches should be developed and implemented in accordance with Stormwater Management Manual of Western Australia.					
4.3.7 WATER MANAGEMENT					
Lots must provide for the detention of 16mm of rainfall (based on the lot area) on site – which is equivalent to approximately 60% of the 1-year 1-hour storm event. Where not used for re-use and subject to the particular site and receivable point this detained runoff may be slowly released via a low flow outlet to the road drainage or open drain system.					
Stormwater disposal to be in accordance with approved Development Plan and the Town of Port Hedland’s local planning policy to ensure adequate retention on site, disposal from any basement parking area and connection to local/district stormwater system.					
Any water recycling approaches should be developed and implemented in accordance with Stormwater Management Manual of Western Australia.					
4.3.8 WASTE MANAGEMENT					
No skip bins are permitted within the South Hedland Town Centre other than for construction and subject to approval through a Construction Site Management Plan.					
On – street, standard service bin collection is not supported within the South Hedland Town Centre.					
Bin Collection areas shall be designed in accordance with the Town of Port Hedland Health Local Law.					
A Waste Management Plan is required to be submitted and approved prior to a Development Application approval being issued.					
A Waste Management Plan may indicate that a private waste operator will service the development. In this event it is advised the Town’s requirements for waste collection are followed to ensure that the Town is able to service the development should contract conditions change.					
The location of vehicle access points, including location to road, crossover sizes and vehicle movements are required to be approved by the Manager Technical Services.					

LANDSCAPE DESIGN					
	Y	N	N/A	P	COMMENTS
4.4.1 BIODIVERSITY					
A minimum of 60% of all planting must be selected from the Recommended Planting List on page 30-31.					
4.4.3 SOFTSCAPE ELEMENTS					
Shade must be provided to walkways and sitting places.					
For pedestrian access paths and passive recreation areas, landscaping must be provided.					
Areas of lawn cover must be confined to specific usable areas only.					
All planting areas must be mulched (either organic or gravel) to a minimum 50mm (gravel) or 100mm (organic) deep.					
Crackerdust is not permitted to be used as garden mulch, or in any communal area.					
Landscape areas should not provide concealment or entrapment areas.					
All planting areas located with access to the public (e.g. street setbacks) are not to utilise gravel mulch.					
The design of landscaped areas are not to provide opportunities for anti-social behaviour.					
4.4.4 HARDSCAPE ELEMENTS					
Seating, bollards, rubbish bins and other furnishings of open spaces must be of a robust, contemporary style that complements the street furniture of the public environment.					
Paving materials must be robust, high quality, easily maintained and integrated into the overall character of the development.					
In order to minimise reflected heat load, external paving abutting the building must have substantial shading by eaves, awnings or landscaping.					
All proposed seating, bollards, rubbish bins and other furnishings visible from the public realm to be approved by council.					
4.4.5 SCREENS AND FENCES					
Vegetation must be located to maintain clear view-lines between activity areas in buildings and open spaces and parking lots.					
All fencing which abuts public open space, including a street must be maximum 1.2m high.					
Where access must be physically denied, visually permeable fencing is to be used to a maximum 2.1m high. This fencing is not to provide footholds or other climbing aids.					
Cyclone fencing, razor wire and 'panel' fencing (Colorbond or fibre cement) must not be used within the City Centre precinct.					
PRECINCT PLAN					
GENERAL PROVISIONS					
Refer to Precinct Plan on page 34 - 35 of this document to comply with mandatory precinct specific requirements.					