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**City of South Perth**  
Waterford Triangle Urban Design Study  
Urban Design Guidelines  
November 2010



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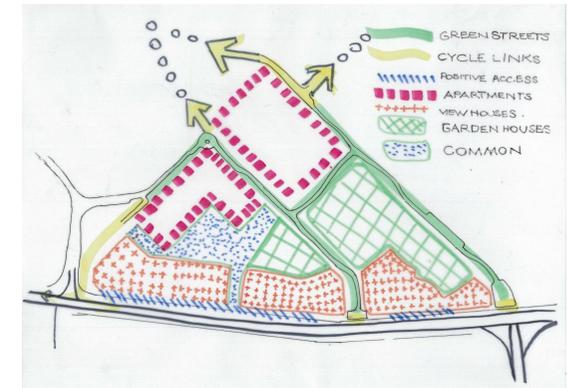


## Introduction

The Urban Design Study for the Waterford Triangle has been commissioned jointly by the Department of Commerce and the City of South Perth. It will build on the findings of the work undertaken in Stage 1, which was a community engagement study to gain an understanding of the needs and aspirations of the community in respect to the study area. The study will explore and give form to the aspirations of the residents, landowners and other stakeholders of land within the Waterford Triangle. It will identify an urban design vision, and a series of strategies to achieve the vision through redevelopment and careful town planning control.

These Guidelines complement the Urban Design Plan (UDP) to deliver the desired built form outcomes for the Waterford Triangle. The study area is at the south-eastern edge of the City of South Perth and bounded by Conlon Street and Curtin University to the west/north west, McKay Street to the east/north east and Manning Road to the south (see Figure 1). The Curtin University campus is immediately adjacent to the study area to the north and west. To the east are residential land uses and the Clontarf Aboriginal Education & Training Centre is across Manning Road to the south. Immediately to the south of the site is a recently approved residential subdivision of over 120 single and group housing lots. The Canning River is approximately 500m to the south.

The study area covers almost 7 hectares and includes private land and reserves.



**Figure 1: Waterford Triangle Study Area**

## Objectives

The vision for the Waterford Triangle has been prepared to ensure the revitalisation of an urban residential village to meet a number of community identified objectives.

The UDP and Urban Design Guidelines specifically respond to community concerns about the present character of Waterford and issues of degraded streetscapes, aging housing stock, perceptions of safety, unwelcoming parks and poorly lit open spaces. The intention is to provide a positive image and development guide for the future of Waterford; to squarely address community activity, infrastructure provision, updated development to match changed demographics and the retention of valued attributes from the existing area.



These Design Guidelines will assist the City of South Perth in making decisions about the area to deliver the vision in a more fluid and forward design focus than is possible with the town planning scheme alone. They will also enable prospective developers to frame redevelopment proposals more attuned to the community vision.

The community identified 10 guiding principles for the Waterford UDP to address. These formed the Design Brief to state that Waterford Triangle should:

- 1. Continue to be a place for a mixture of residents, students and non-students, owner-occupiers and tenants, housing needs to provide sufficient opportunity for this diversity of lifestyle opportunity within the area.*
- 2. Maintain its sense of community with a focus on the design and use of public spaces, easy access*



*to facilities, amenities and surrounding needs.*

3. *Improve, through re-design, the leafy landscape, park and places for residents to exercise, play and meet in the public domain.*
4. *Have streets which do not carry large numbers of vehicles or provide for through-traffic but instead cater for slow-moving vehicles, pedestrians and bicycles.*
5. *Improve the quality of its streets to offer better:*
  - *pathways and cycle access;*
  - *lighting and open-sightlines;*
  - *balance between visitor parking and green space;*
  - *infrastructure and street-care;*
  - *incorporate better Water Sensitive Urban Design into public areas;*
  - *signage and local identity of place;*
  - *small spaces for people to stop and chat; and*
  - *allocation of space between private and public activities.*
6. *Improve the edge of the site adjacent to Manning Road in terms of safe access for abutting properties, and explore better access alternatives to individual driveways onto Manning Road.*
7. *Encourage redevelopment to adopt best design for energy and water conservation, and to reflect a set of consistent design values for Waterford.*
8. *Re-think the configuration of spaces and land uses to offer more variety and interaction between residents.*
9. *Introduce some key facilities/amenities/activities/businesses which might be of use to local people and create a stronger community spirit and sense of belonging.*
10. *Investigate ways to better link to the Canning River, Curtin University and the nearby Waterford Plaza Shopping Centre.*

It is the intention for this study to be community involved and driven and it is the design principles which provide a mechanism for the community to assess the qualities and attributes of urban design





development within the Waterford Triangle.

The Council of the City of South Perth and technical officers shall generally have regard to the Urban Design Guidelines and the UDP when making decisions on development proposals in the Waterford Urban Village.

These Urban Design Guidelines (supporting the UDP) indicate the quantitative and qualitative measures (criteria) necessary to achieve the vision.

The provisions within this document are referenced numerically after the letter 'P' (i.e. P3.8), and against the objectives to aid use. It is an adjunct to the Planning Scheme and therefore definitions of terms and expressions used in this document shall have the same meaning as set out in the City of South Perth Town Planning Scheme No. 6 and/or the Residential Design Codes WA (the R-Codes). Where a term or expression is used which is not included in Town Planning Scheme No. 6 or the R-Codes, the pertinent interpretation of that term or expression is included in this document.

These Guidelines elaborate and extend some of the design directions identified in the R-Codes and should be regarded in this manner, i.e. where there is a difference between the guidelines and the R-Codes for the purposes of guiding the discretion of Council these Guidelines shall prevail. For ease of understanding and interpretation these guidelines are cross-referenced to the corresponding relevant sections of the R-Codes.

These Design Guidelines should be read in conjunction with the UDP.



## Related Policy Documents

### Metropolitan Context

#### Directions 2031

The Western Australian Planning Commission (WAPC) has released its final strategy Directions 2031 for Perth and Peel Region. This plan identifies that for Perth to grow and to meet objectives to remain a liveable city but with better sustainability credentials, that there needs to be more focus and clarity to guide how existing urban neighbourhoods are redeveloped.

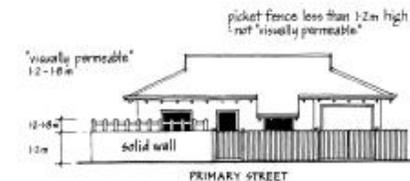
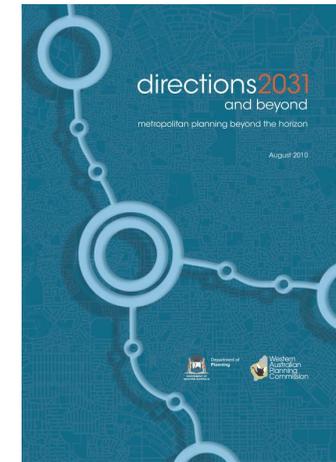
#### State Planning Policy 3.1 – Residential Design Codes

SPP 3.1 (the R-Codes) provides a consistent basis for residential development throughout Western Australia, albeit under the control of local government, through the town planning scheme and local laws. The R-Codes cover all fundamental site and built-form requirements for planning control purposes and assist Councils to manage this aspect of development without resorting to separate local planning policies or area-specific variations.

SPP 3.1 introduces a common terminology and WA housing design vernacular to outline requirements for housing density, streetscape, boundary setbacks, open space, access and car parking, site works, building height, privacy, design for climate, and incidental development. The policy is incorporated into all in WA town planning schemes by reference and is therefore to be considered as part of the City of South Perth Town Planning Scheme No. 6.

In the case of Waterford Urban Village it is necessary to supplement the general design content of the R-Codes to more specifically address the community identified urban design outcomes. In some instances the Design Guidelines will replace the R-Codes with more specific design guidance.

Where these Design Guidelines do not address a particular matter, Council should refer to the R Codes when making their decision.





## Private Realm Provisions

The provisions below have been cross-referenced to R-code Design Elements 6.1 – 6.10. Where there are inconsistencies, these Guidelines will prevail.

### Density

(See also R-Codes Design Element 6.1)

*Objective – Re-development of the Waterford Triangle should support increased densities to respond to the unique users and synergies of the area without negatively impacting on the surrounding urban fabric.*

\*For Precinct boundaries, see Section 3 of the UDP.

#### P1.1 Apartment Precinct:

For sites less than 1000m<sup>2</sup>, the minimum density shall be R60 and the maximum density R80.

For sites with an area between 1000m<sup>2</sup> and 3000m<sup>2</sup>, the minimum density shall be R80 and the maximum density R100.

For sites greater than 3000m<sup>2</sup>, the minimum density shall be R100 and the maximum density R120.

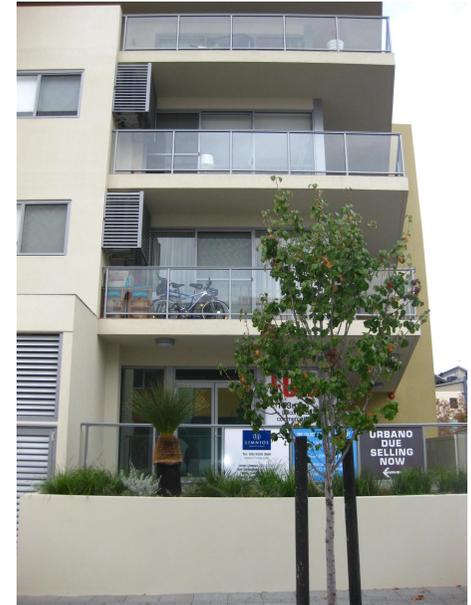
#### P1.2 Terrace, Park Terrace and McKay Street Precincts:

For sites less than 1000m<sup>2</sup>, the minimum density shall be R30 and the maximum density R60.

For sites greater than 1000m<sup>2</sup>, the minimum density shall be R60 and the maximum density R80.

P1.3 For the Terrace and Park Terrace Precincts, a minimum site area of 1000m<sup>2</sup> is required to achieve Multiple Dwellings.

P1.4 No Multiple Dwellings will be permitted in the McKay Street Precinct.





## Streetscape Appearance

(See also R-Codes Design Element 6.2)

*Objective – Re-development of the Waterford Triangle should respond sensitively to the site and support a renewed and united sense of place. New development should be visually attractive and able to be viewed as an element of an overall streetscape. The edges of development areas need to be interactive, and provide a simple and smooth definition between public and private spaces.*

P2.1 Dwellings are to be designed so that front entries are visible from the street. Access to and from car parking areas and building entrances shall be adequately sign-posted and lit.

P2.2 Developments of two storeys or more are to have balconies and/or windows from habitable rooms facing the primary street and/or rear laneway as appropriate. Balconies, particularly for residential uses, shall have a minimum 2.0 metre depth to encourage active use.

P2.3 Front fences where proposed are to be no higher than 1 metre and shall be 80% permeable.

P2.4 Lot frontages are to be at least 10m wide for single and grouped dwellings in all Precincts.

P2.5 Street elevations and development setbacks on the western side of Mackay Street south of the intersection with Keaney Place shall be designed to more closely reflect the prevailing detached single-residential streetscape of the eastern-side of McKay Street (City of Canning). Articulation of facades and the use of tiled roofs of equivalent pitch to the eastern side will be general design requirements.





## Front and Side Setbacks

(See also R-Codes Design Element 6.2 and 6.3)

*Objective – To maintain a residential neighbourhood environment by ensuring the height and relationship of buildings to the street and other boundaries is appropriate to a human scale. Built form needs to positively address the street to provide opportunity for active and interesting pedestrian experiences.*

P3.1 – For the Terrace, Park Terrace and McKay Street Precincts, buildings shall be setback a minimum of 2m from the primary street. Where a property is located on a corner site, development shall clearly respond to one street as the primary street and setback variations may be permitted where both streets are appropriately addressed.

P3.2 For the Apartment Precinct, the primary street setback shall be a minimum of 2m. This may be reduced for multiple dwellings provided that any stories above the second storey are setback a minimum 5m from the boundary.

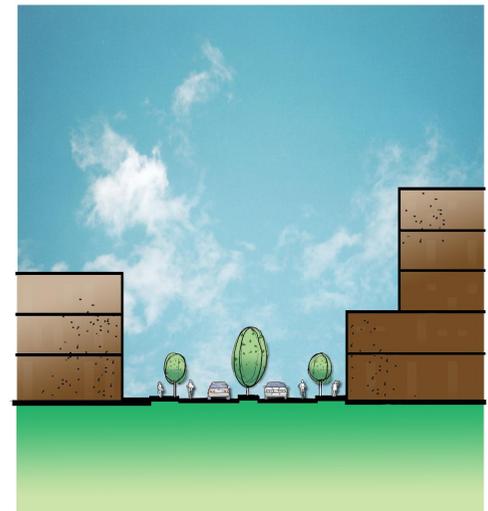
P3.3 For single and grouped dwellings in all Precincts, side setbacks may be reduced to 0m for up to 2 storeys for two-thirds of the length of the boundary. Blank façade treatments where setbacks are 0m shall be made clean and tidy and be treated where possible to provide interest. Multiple dwellings are to have side setbacks of a minimum of 2m.

P3.4 Where a pedestrian accessway has been identified adjacent to a side boundary of a development site, the development shall be required to be setback a minimum of 0.5 m and those walls facing the pedestrian accessway shall have windows which allow overlooking of the accessway from within a habitable room/s of the dwelling.

P3.5 Street setback areas are to be used for landscaping, driveway access and tandem car-parking but are not to be used for garage or carport construction.

P3.6 Utilities such as footpaths, street furniture, drainage swales, service switchgear or pits located in the street and adjacent to a development site may require an increase of street setback to achieve required access clearance distance.

P3.7 A minimum of 25% of the street elevation of a residential building/s shall address the street either by a major opening or balcony, increasing to 35% where a building is two storeys or more.





## Open Space

(See also R-Codes Design Element 6.4)

*Objective – To encourage a sustainable intensity of residential redevelopment yet achieve the outcomes identified by the community of the Waterford Triangle for a green neighbourhood with trees, habitat and open space.*

P4.1 Within the Terrace and McKay Street Precincts, for sites below 1000 m<sup>2</sup> in area there shall be a minimum of 40% open space; whereas for sites in excess of 1000 m<sup>2</sup> there shall be a minimum of 50% open space.

P4.2 Within the Park Terrace Precinct, a minimum of 30% open space shall be permitted where direct pedestrian access from the dwelling is provided to the central park area.

P4.3 Within the Park Terrace Precinct, walls and fences facing the POS are to be in accordance with Clause 6.2.5 of the R-Codes.

P4.4 Within the Apartment Precinct, for sites below 3000m<sup>2</sup> in area there shall be a minimum of 40% open space; and for sites in excess of 3000 m<sup>2</sup> in area there shall be a minimum of 35% open space.

P 4.5 Properties directly adjacent to Public Open Space (POS) are to have at least one major opening at ground level and a major opening/balcony for every corresponding level overlooking the POS. Windows should be positioned to overlook pedestrian routes, provided that privacy concerns are met.





## Parking

(See also R-Codes Design Element 6.5)

*Objectives - To ensure that vehicle access and parking is provided in a manner which is convenient to use, functionally safe and yet does not dominate public and private spaces to the detriment of walking and cycling.*

P5.1 Garages and car ports associated with dwellings shall be located behind the front setback area.

P5.2 Multiple dwelling development shall make provision for parking in a dedicated facility which is accessible from the street but is secure, offers weather protection, is screened from street view and able to be conveniently accessed by residents.

P5.3 Direct access to carports/garages from the rear laneway within the Terrace and Park Terrace precincts is not permitted for Multiple Dwellings. Only a shared internal driveway access into individual carport/garage areas will be permitted.

P5.4 On-site visitor parking associated with residential parking shall be located close to the entrance of residences.

P5.5 Driveway access restrictions to properties will be in accordance with the Access Plan (Figure 2)



Figure 2: Access Plan



## Finished Levels

(See also R-Codes Design Element 6.6)

*Objective – Development designed to directly address the street and adjacent open spaces so that pedestrians and other users experience a connection with the land uses that form part of the Waterford Triangle.*

P6.1 The ground floor level of all buildings is to be no greater than 0.5m higher than the natural ground level on adjacent land in the public domain; and where there is a retaining wall and/or fence required this shall be no more than a total of 1 metre in height at the boundary. If fenced, the fence shall be visually permeable to afford good sight lines and permit visual interplay between street and property (see also P2.3).

P6.2 The ground levels of setback areas are to be blended to match those levels of abutting street and park spaces but may have low change of grade or a visually permeable fence to demark private from public ownership of space (see also P2.3).



## Building Height

(See also R-Codes Design Element 6.7)

*Objective – To improve visual interest in the built form and skyline by allowing for a variety of building heights suited to different household characteristics, living styles and land uses.*

P7.1 Maximum building heights shall conform to the Building Heights Plan (Figure 3) and heights shall be measured in accordance with the City of South Perth Town Planning Scheme No. 6.

P7.2 Where plant and equipment extend above the rooftop, the intention is to achieve clean roofline profiles and screen from the street view. The maximum heights permitted may be varied in order to achieve this, provided that screening can be incorporated into architectural features that form an integral part of the building.

P7.3 Flat roofs (i.e. a roof pitch of 0°) are not permitted.



Figure 3: Building Heights Plan





## Orientation, Solar Access and Privacy

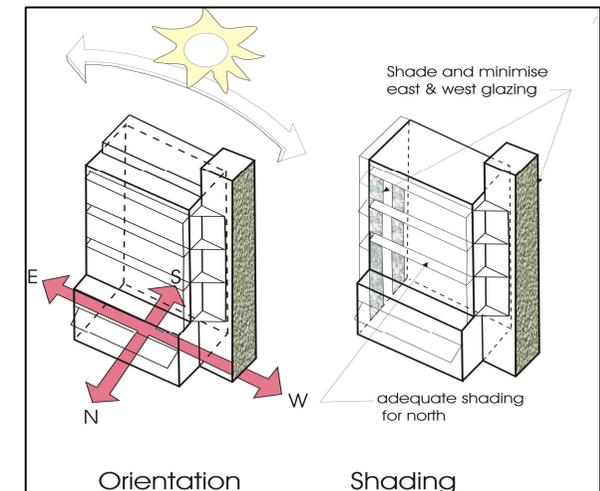
(See also R-Codes Design Element 6.8 and 6.9)

*Objective – To ensure that all new development is orientated and designed appropriately to take full advantage of cooling summer breezes and warming winter sunlight and to reduce dependence on mechanical HVAC systems. Privacy for dwellings is to be achieved by appropriate acoustic and visual design.*

P8.1 Residential and other buildings are to be designed and sited to achieve the following:

- ▶ Openings for ventilation on more than one side of the building and internal breezeways for cross-flow.
- ▶ Minimal glazing on façades facing east and west; adequate shading is to be provided for all glass other than south facing glass.
- ▶ Bedrooms are to be screened from the impacts of noise and visual intrusion.

P8.2 Private open space is to be located on the northern side of buildings where possible.





## Sustainability

*Objective – To establish a high standard of design for energy efficiency, water conservation and sustainability as applied in the development of all new buildings and works within the Waterford Triangle.*

P 9.1 All dwellings should comply with the regulatory requirements outlined in the WA State Government 5 Star Plus for Energy and Water Use and Building Code of Australia.

P 9.2 Tap fittings (excluding bath and garden) and sanitary flushing systems (dual flush) should be minimum 4 stars WELS rated. Showerheads should be a minimum 3 stars WELS rated.

P 9.3 Gardens should be designed for low water requirement native plants (for habitat and provenance value) OR devoted to food production where irrigation is required. Where the irrigation of gardens is necessary, the use of treated non-potable water needs to be investigated and applied – possibly as part of a communal system.

P 9.4 Ceiling and wall insulation should be utilised to provide greater thermal efficiency and performance where possible.



### 5 Star Plus

Energy Use in Houses Code  
Water Use in Houses Code



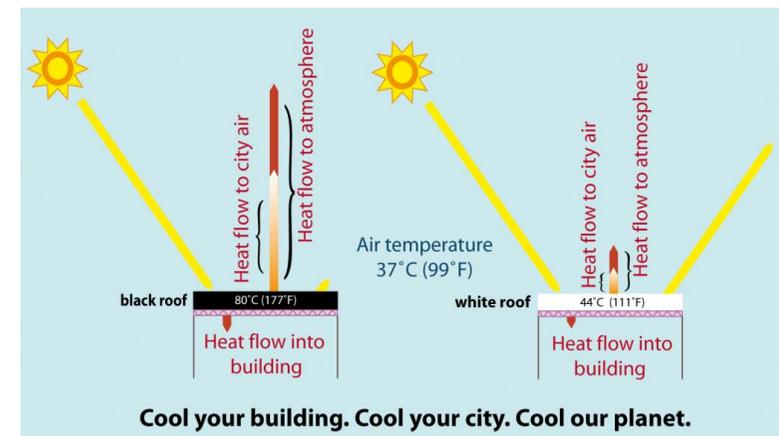


## Materials & Colours

*Objective – To ensure that new developments are designed to feature a selection of materials, colours and textures of finish to visually harmonise with adjoining buildings to create a united and enhanced streetscape appearance.*

P 10.1 Selections of external building materials and colours shall be related to the palette prepared and adopted by the City of South Perth or alternatives as approved by Council on advice of a consulting architect.

P 10.2 Roofing materials are to be non-reflective, light coloured (other than solar heating or photovoltaic cells) and should not be dark coloured or heat absorbent colour roofing materials.



Source: Physorg



## Public Domain Objectives

### Public - Private Space Relationships

*Objective – To provide interesting and interactive relationships between development, private and public spaces throughout the Waterford Triangle by recognising the importance of activities and community management of spaces to engender a sense of ownership of spaces and focus of interest.*

The streets and spaces of Waterford Triangle are currently under-valued by the community. Developers of amalgamated sites and/or multistorey developments have an opportunity to contribute to the sense of place of the Waterford Triangle by providing interesting outlooks, location of artworks, spaces and ensuring adequate lighting is provided.

The design, reconfiguration and management of public spaces throughout the Waterford Triangle needs to consider how best to provide for opportunities of use where residents and visitors might be able to play and interact on 'neutral' ground (i.e. public spaces). There needs to be a careful consideration and clear statement of intended purpose as part of the transformation of the Waterford Triangle streets into *living streets*. Provision needs to be made for good solar lighting, thoughtful and inspiring street furniture for sitting, playing, exercising, and otherwise enjoying the outdoors within close proximity to neighbours friends and family.





## Access Laneways

*Objective – To facilitate the cost-effective development of alternative access laneways for properties abutting Manning Road and as nominated on the Urban Design Plan as a pre-requisite for redevelopment of adjoining land.*

The Waterford Triangle UDP foreshadows a series of design innovations which can only be implemented by redistributing land and reconfiguring roadways and other public spaces. To achieve these aspects of the UDP, an Improvement Plan could be incorporated within a Scheme Amendment.

An Improvement Plan would provide for the creation of the proposed laneways (rear and front). The laneways would need to be created prior to any redevelopment to allow for redevelopment to address the laneway and to provide safe vehicular access for increased traffic movements. As the preferred rear laneway alignment is within private properties, the Improvement Plan would need to include specific provisions relating to land acquisition and developer contributions. A portion of the rear of each affected lot would be required to be ceded to the City of South Perth (CoSP). This land will be used by CoSP to construct sealed laneways for the use of local residents to access abutting properties.

An Improvement Plan should also include the proposed link between the central park and Manning Road. This is intended to improve the walking and cycle access to the Waterford Triangle making this mode of access more direct and enjoyable by being located within a park landscape.

Required land for these aspects will need to be identified spatially within the Improvement Plan and CoSP will need to include provisions in its Town Planning Scheme that addresses land acquisition requirements and developer contributions to recover the costs for these works in a manner which is equitable for all landowners in the Waterford Triangle.

All other improvements within the Waterford Triangle undertaken to upgrade the public domain (i.e. refurbished streetscapes, new footpaths and cycle ways, water conservative stormwater treatments, new lighting and furniture, additional land requirements, and the administration and design costs associated with implementing the urban design) will also need to be identified within the Improvement Plan. This process will ensure that costs and benefits to all landowners are distributed across all those properties within the Improvement Plan area.





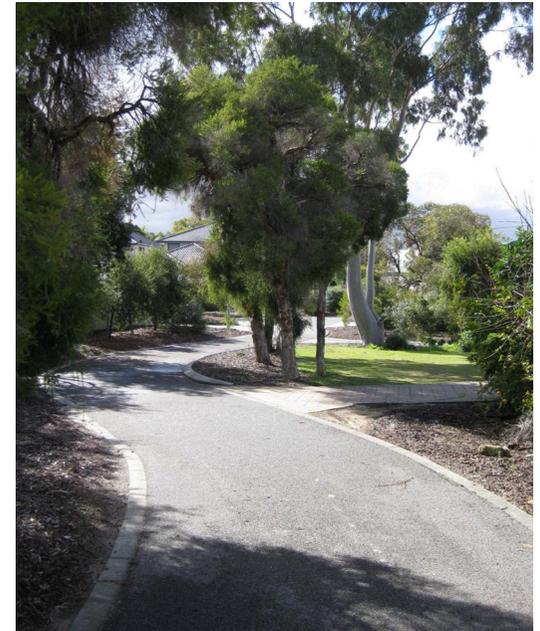
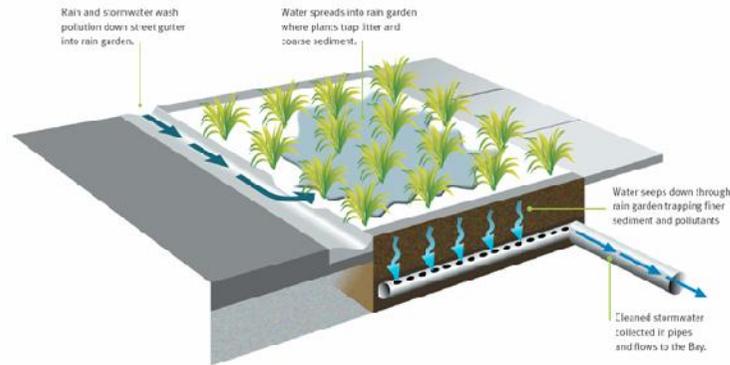
## Landscaping

*Objective – The landscape for the Waterford Triangle will use an appropriate balance of indigenous and non-indigenous species, suited to the location and purpose of the space, and the available water resources.*

Residents have reported that the Waterford Triangle currently has a poor landscape quality for private and public open space areas, however they highly valued the proximity of mature trees and areas with natural beauty and environmental qualities. The degraded nature of the existing landscape does not encourage people to invest time or effort in their own private spaces.

The revitalisation of Waterford Triangle will be possible if there is a shared interest and commitment to the development of a garden style urban village. For this to be properly realised there needs to be attention paid to better vehicular access and parking, road design, movement and the relationship between private and public open space areas.

The delivery of *living streets* will require the City to work closely with residents and property owners. It will create the opportunity for the street to be used for leisure activities to become a leisure and play-space for children and adults alike.





## Safety & Security

*Objective - To ensure a well integrated urban form that provides a safe environment for all users by maximising visibility and surveillance, increasing pedestrian activity and maximising connections between area, and clearly defining private and public space responsibilities.*

The Waterford Triangle is located adjacent to a university and TAFE campus and so it is important that there is an environment in which students can feel safe and secure when they walk and cycle through the precinct. Crime is a perception but can readily also become a reality due to certain prerequisites. Crime is a behaviour, which is a function of *Motivation + Opportunity* ( $B = f M + O$ ).

*Crime Prevention Through Environmental Design* or CPTED<sup>1</sup> is a design approach which assumes that avoidance of poor design in the built environment can reduce the opportunity for crime within an area. This addresses Opportunity. Motivation is partly addressed by the creation of opportunities for positive relationships between residents and other people who occupy and use the streets and spaces of Waterford Triangle.

In addition to generally acknowledged CPTED strategies such as to enhance natural surveillance of streets and spaces, natural access control and territorial reinforcement around the site, the Waterford Triangle approach encourages residents to own and take an interest in what happens in the streets and spaces. To this end programs such as community gardens and/or walking school bus, fetes or street-parties can achieve positive interactions between neighbours



<sup>1</sup> Council may also have regard for WAPC Planning Bulletin 79, 'Designing Out Crime' Planning Guidelines when assessing designs for both the public and private realm in Waterford Urban Village.



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