

Policy

Residential Subdivision and Development Guidelines



Residential Subdivision and Development Guidelines

The development controls proposed as part of the policy are intended to ensure that new development will enhance the Town’s character, generally facilitate a higher quality form of development and to ensure a distinctive, diverse and yet harmonious urban environment.

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			Name	Initials	Name	Initials
1	20.05.10	Final	Murray Casselton		Brett Wood-Gush	

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1.0 Introduction

The Town of Kwinana (the Town) covers an area of approximately 118 square kilometres and is situated approximately 40 kilometres south of the Perth Central Business District. The initial urbanisation and development of the Town occurred in response to the emergence of the State's first heavy industry development area within the Kwinana locality in the 1950's and the need to house associated workers. Since this time further urbanisation has occurred, including the development of additional low density suburban residential development and associated commercial centres. The original concepts utilised to guide the urban design and layout of the Town reflected contemporary planning principles of the time and included the desire to incorporate large individual lots, access to bushlands and practical low cost housing. Whilst some of these attributes were also applied to later developments the general form of development has followed that associated with its era of construction and development.

A primary objective of the Town of Kwinana Residential Subdivision and Development Local Planning Policy ('the Policy') is to assist in achieving the objectives of the Town's Local Housing Strategy ('the Strategy'). This will be achieved through the establishment and implementation of appropriate planning requirements and standards in respect to residential subdivision and future forms of residential development generally, and particularly for those areas identified for increased residential densities based around local centres. Specific planning requirements and standards are also proposed to be applied to the suburb of Medina in recognition of its distinct character and strong sense of local community.

The development controls proposed as part of the policy are intended to ensure that new development will enhance the Town's character, generally facilitate a higher quality form of development and to ensure a distinctive, diverse and yet harmonious urban environment.

In developing the Policy it was noted that some pre- existing consistent characteristics for certain areas within the subdivisional pattern and built form have been established through simple yet effective design elements, such as:

- Limited front fencing or open fencing.
- Buildings well set back from the road reserve.
- Porches and verandas on the front of the dwelling.
- Street trees in road verges.
- Elevated well-ventilated housing due to the use of stumps.
- Minimal intervention with the natural topography.
- Pitched yet simple roof typologies.

These have been reinforced and encouraged or required throughout the Policy framework where appropriate.

1.1 Intended Future Character

The future character of Kwinana is intended to be harmonious and memorable, and provide for the development of a strong sense of community such as that which already exists in some neighbourhoods. Public spaces will be enhanced and new and renovated homes will have strong street presence softened by porches and verandas, consistent with older original housing forms in the area and generally encouraging a more positive relationship and level of interaction between the public and private realm. Improvements to the quality of front gardens and landscaped areas will be encouraged to be designed to create a transition between the home and the street that brings the indoors out and creates lively, safe streets.

Medina Future Character

The suburb of Medina was the first suburb developed within the Town and was designed by eminent town planner Margaret Feilman in the 1950's in response to the emergence of a heavy industry development area in Western Australia and the need to house associated workers.

Within Medina existing tree lined avenues will be used to lead to high quality public spaces and the style of new development will be required to respond to the variable sloping topography of the suburb and blend in to the predominantly single storey setback nature of existing houses. Two-storey development will generally be confined to the rear of development sites unless in a loft configuration or other form that maintains a consistency of building form and scale within the streetscape.

1.2 Planning

Good planning will create a more attractive and sustainable Town that has been designed to:

- Integrate in to local commercial centres and other community facilities within the area.
- Complement and allow for the improvement of pedestrian paths linking transport to business, recreational and residential areas.
- Ensure that housing densities and forms are varied and adaptable to meet differing household requirements and to evolving needs as occupants change.

- Allow for built form that promotes security and safety by making streets and other public areas active places.

1.3 Relationship to Other Regulations

The Town of Kwinana Town Planning Scheme No. 4 ('the Scheme') outlines the statutory processes and controls for land within the Town's jurisdiction. The Scheme provides standards for parking, plot ratio and outlines permissibility for various land uses throughout the differing areas that make up the Town.

The Town has adopted this Policy as a planning policy under the Scheme, and it should be read and interpreted in conjunction with the Scheme Text and other relevant planning policies and design guidelines. In determining any application for planning approval, the Town will have due regard to the Policy.

Where there is any inconsistency, the Policy takes precedence over the Western Australian Planning Commission's Residential Design Codes (April, 2008) ('R-Codes'), especially in relation to minimum site area, setbacks, battleaxe subdivision configurations, height and car parking configurations. Where the Policy is not specific on a residential design issue the R-Codes apply.

1.4 Ecologically Sustainable Design

The Town wishes to foster the highest possible standards of development, and to promote innovation in design and construction wherever possible, especially in the areas of energy efficiency and environmental sustainability.

1.5 Crime Prevention Through Environmental Design (Cpted)

Many requirements in the Policy are aimed at meeting the needs of residents in a way that also reinforces neighbourhood safety. This is achieved through careful attention to the relationship between public and private spaces to ensure passive surveillance.

Passive surveillance is the natural observation that occurs when public spaces are visible from passing traffic and from surrounding homes. 'Defensible space' is the principle of ensuring the ownership of space is understood and that space is controllable by those who own it. Clear definition between public and private space ensures that only those with a right to be in a space can easily enter it. Anybody else has trouble entering the space, and if they do their presence will arouse suspicion. These factors have been proven to discourage crime, especially opportunistic crime. Visually permeable fences, roller doors, gates, porches

and veranda's play a special role in maintaining defensible space while allowing for passive surveillance.

CPTED strategies reduce crime, create a greater sense of security and reinforce the neighbourliness of an area. Accordingly, CPTED principles have been incorporated into the Policy to reinforce the safety and security of the area.

1.6 The Policy

The Policy will increase certainty and assist in timely development approval. The Town retains its right to exercise discretion and will support development that advances good site responsive and contextual urban design even if it does not rigorously meet Policy requirements.

The Policy applies to all subdivision and residential subdivision and development within the Town of Kwinana with additional planning requirements and standards being applied to the suburb of Medina.

The Policy includes:

1.6.1 Subdivisional Guidelines

These provide subdivision controls and variations to normal standards, including guidance in respect to battleaxe subdivision, narrow lot subdivision (Medina only), corner lot subdivision and preservation of on- site vegetation wherever practical.

1.6.2 Development Guidelines

These provide controls to ensure good character responsive design, addressing a range of issues including encouraging the retention and upgrading of existing houses, maintenance of consistent setbacks, the provision of verandas and porches, the location of car parking structures, fencing, wall and overall height allowances and environmental design initiatives.

2.0 Subdivision Guidelines

2.1 Corner Lot Subdivision

2.1.1 Objective

To encourage corner lot subdivisions as a mechanism for facilitating increased density as they take advantage of double street frontage, minimise driveway requirements and facilitate passive surveillance.

2.1.2 Guidelines (General)

Corner lot subdivisions are encouraged and in the case of split density coding can be subdivided in accordance with the highest density coding average minimum site area per house under the applicable standard of the R-Codes.

Refer to figure 1 – preferred subdivision and Development configuration

2.2 Battleaxe Subdivision

2.2.1 Objective

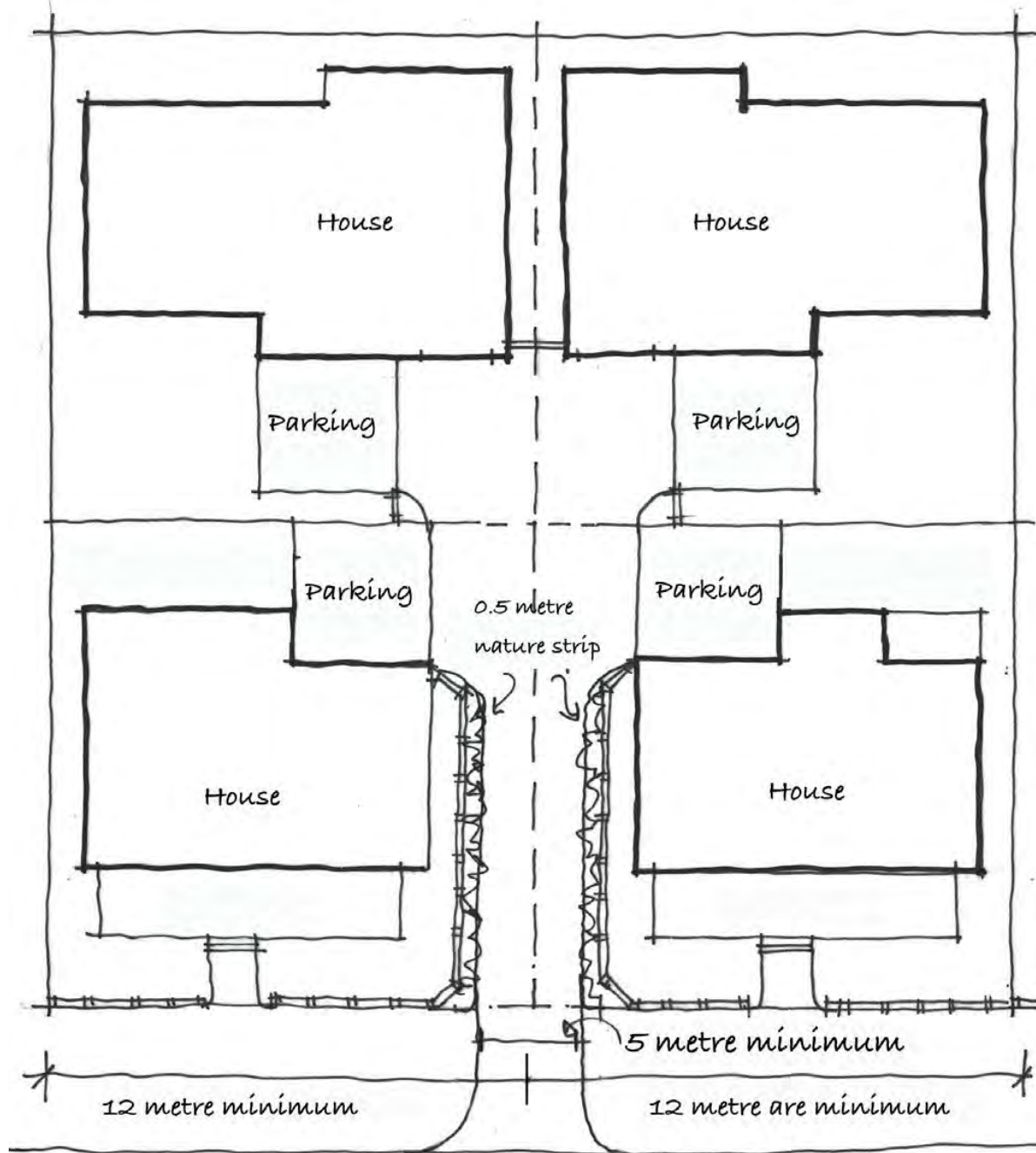
To encourage battleaxe subdivision configurations where they represent the most logical subdivision outcome available for an adequately sized site and where the access leg services a minimum of two rear houses or lots in order to minimise vehicular crossovers and to maintain the existing spatial relationships for existing or new houses fronting the street.

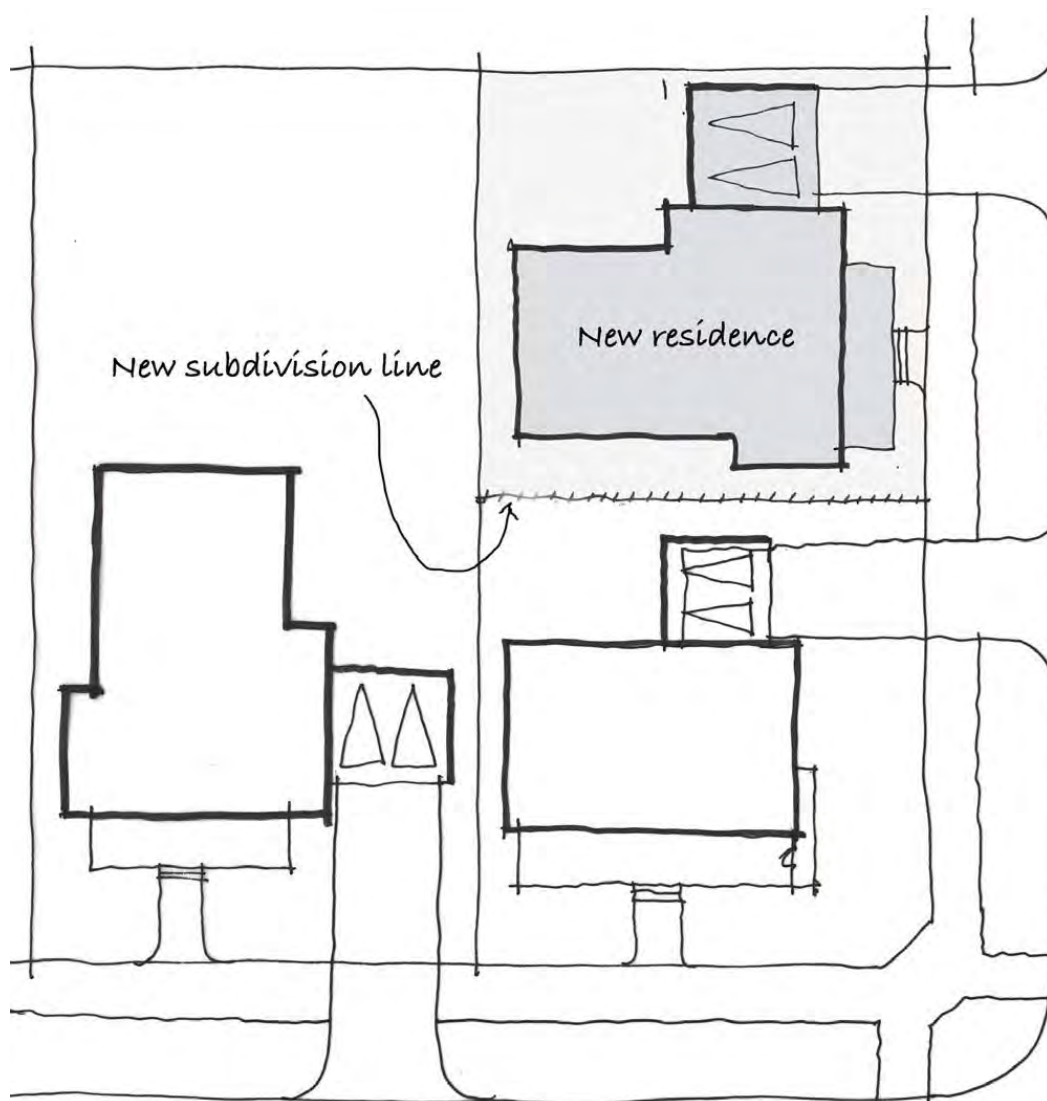
Within areas of Medina identified as having increased density (as prescribed by the R-Codes), allow for a reduction in the area of rear battleaxe lots (not including the battleaxe leg itself).

2.2.2 Guidelines (General)

- a) Where battleaxe subdivision configurations are proposed then a minimum of two rear houses or lots are encouraged to be accessed by the battleaxe leg.
- b) In the case of split density coding, battleaxe subdivision can occur in accordance with the allowance under the highest density coding providing the above requirements are achieved.
- c) All battleaxe legs are encouraged to have a minimum width of 5.0 metres with a minimum standard of landscaping, including a 0.5 metre landscaped and reticulated strip on either side of the constructed pavement.

Figure 1 – Preferred subdivision and development configuration





2.2.3 Guidelines (Medina Only)

- a) Where battleaxe subdivision configurations are proposed then a minimum of two rear houses or lots are required to be accessed by the battleaxe leg. Battleaxe subdivision configurations will not be supported where the battleaxe leg accesses only one rear house or lot (note that these allowances do not include access being provided to the front lot with direct street frontage).
- b) Subject to meeting the above requirement, rear battleaxe lots are permitted to be reduced in area to the average site area per dwelling allowance for the applicable density coding under the R-Codes (i.e. for Residential R30 lots minimum lot size for a battleaxe lot would be 300m²). This area does not include the battleaxe leg itself, which is to be excluded from site area calculations.

- c) All battleaxe legs are required to have a minimum width of 5.0 metres and are to be provided with a minimum standard of landscaping, including a minimum 0.5 metre landscaped and reticulated strip on either side of the constructed pavement. Such landscaping is to be provided at the time of subdivision as a condition of approval and will be maintained as an on-going condition of subsequent development approval.

Refer to figure 1 – preferred subdivision and development configuration

2.3 Narrow Lot Subdivision (Medina Only)

2.3.1 Objective

To remove the capacity for narrow lot subdivisions within Medina as they are seen to result in a built form that is incompatible with the existing low- density character of the suburb.

2.3.2 Guidelines (Medina only)

Other than battleaxe subdivision allowances as stipulated above, subdivision proposals that create lots with an effective street frontage (not inclusive of shared battleaxe legs) of less than 12.0 metres will not be supported.

Note that this policy provision does not apply to battleaxe lot proposals in accordance with 2.2.3.

Refer to figure 1 – preferred subdivision and development configuration

2.4 Preservation of Existing Vegetation

2.4.1 Objective

Any proposed subdivision configurations are to be responsive to any identified existing significant on-site vegetation and to minimise any impact on street trees in order to maintain and enhance the desired leafy character of the Town.

2.4.2 Guidelines (General)

Measures taken to minimise damage to existing substantial or otherwise significant on-site vegetation and street trees are to be demonstrated as part of any subdivision proposal and related plan to the extent that it is practical to do so. This can be achieved through sensitive location of property boundaries and access points and careful consideration of how on-site

vegetation may be able to be accommodated within future outdoor living areas once the house or houses are constructed.

2.5 Upgrading Of Existing Development

2.5.1 Objective

Where a subdivision proposal will result in the retention of an existing house in either a grouped or single house format, it is desirable that the retained house be upgraded to a standard commensurate with the intended quality of new development in order to improve the visual amenity and standard of housing provision within the area

2.5.2 Guidelines (General)

Where a subdivision involves the retention of an existing house in either a grouped or single house format, then a condition of subdivision approval will be imposed to ensure that the retained house is upgraded to a standard commensurate with the intended quality of any new development. Upgrading requirements will be specified by the Town as part of the subdivision comment process and may include the following:

- a) Replacement or painting of roofs.
- b) Rendering, painting or recladding of the front elevation.
- c) Upgrades to landscaping, including the establishment of reticulated front gardens.
- d) Rectification of any structural integrity issues associated with house features such as porches and verandas.
- e) The removal of any substandard outbuildings and waste.

3.0 Development Guidelines

3.1 RETENTION OF EXISTING HOUSES

3.1.1 Objective

Where retention of existing houses is proposed landowners are encouraged to upgrade their standard as part of any related development proposal with the objective of enhancing the Town's character and generally facilitating a higher quality form of development within a distinctive, diverse and yet harmonious urban environment.

In order to maintain the existing character of Medina, landowners are encouraged to retain and upgrade the standard of existing houses where their condition and position on site makes it practical to do so.

3.1.2 Guidelines (General)

Where a development proposal for grouped housing involves the retention of an existing house, it is recommended that the retained house is upgraded to a standard commensurate with the intended quality of any new development. Upgrading considerations are detailed in 3.1.3 below.

3.1.3 Guidelines (Medina Only)

Within Medina, where a development proposal for grouped housing involves the retention of an existing house, then a condition of development approval will be imposed to ensure that the retained house is upgraded to a standard commensurate with the intended quality of any new development. Upgrading requirements will be specified by the Town and may include the following:

- a) Replacement or painting of roofs.
- b) Rendering, painting or recladding of the front elevation.
- c) Upgrades to landscaping, including the establishment of reticulated front gardens.
- d) Rectification of any structural integrity issues associated with house features such as porches and verandas.
- e) The removal of any substandard outbuildings and waste.

3.2 House Design, Site Composition and Streetscape

3.2.1 Objective

To establish a residential built form appropriate for the location that enhances the Town's character, generally facilitates a higher quality form of development, and improves streetscapes and the spatial relationship between houses and the street.

Within Medina the intention is to also reinforce the existing character and features of the suburb's housing and streetscapes.

3.2.2 Guidelines

Setbacks (General)

- a) A porch, veranda or equivalent is permitted to encroach in to the front setback area by up to 2.0 metres (note that this would also be subject to the requirements of the Building Code of Australia).
- b) All new houses fronting the street are encouraged to have a porch, veranda or equivalent to the front of the house, with a minimum width of 50% of the frontage of the
- c) Any provided porch, veranda or equivalent is required to be visually permeable and open to the street. These spaces are not intended to function as an internal room and on this basis are not permitted to be fully enclosed.

Setbacks (Medina Only)

- a) No averaging of front setbacks is permitted using the provisions of the R-Codes as encapsulated in Clause 6.2.1 A1 (i).
- b) All new houses fronting the street are required to have a porch, veranda or equivalent to the front of the house, with a minimum width of 50% of the frontage of the house that is at least 2.0 metres deep.
- c) With the exception of boundary walls to access legs where battleaxe subdivision is proposed and the pre-existing house is retained, no boundary wall development will be permitted for any house that has direct frontage to the street.

Refer to figure 2 – Setbacks diagram

House Height, Mass and Scale (General)

Houses are subject to the wall and height requirements as specified for Category B under Clause 6.7.1 A1.1 under the R-Codes.

House Height, Mass and Scale (Medina Only)

- a) All new houses fronting the street are required to present a single storey elevation and character when viewed from the street.
- b) The floor plate of houses fronting the street are preferred to be raised a minimum of 0.3 metres and a maximum of 1.0 metre above the average natural ground level at the front setback line (established by taking the average of the natural ground levels where the front setback line intersects with the side property boundaries). This can be achieved in a number of ways including the use of stumps, retained areas and brick build-ups.
- c) Houses fronting the street are preferred to have minimum and maximum wall and overall heights as shown in Table 1, measured from the raised levels (not from natural ground level) as required under the previous provision:

Table 1 – minimum and maximum wall and overall heights

Heights	Minimum	Maximum
Wall Height	3.2 metres	3.5 metres
Overall Height	5.5 metres	7.5 metres

- d) Variations to the above wall and overall height recommendations will be considered for two storey components to the rear of houses fronting the street where these are screened from view and where the house maintains a single storey character when viewed from the street.
- e) Houses on rear battleaxe lots are subject to the wall and height requirements as specified for Category B under Clause 6.7.1 A1.1 under the R-Codes.

Refer to figure 3 – height, mass and scale diagram

House Roofline (General)

- a) Eaves are encouraged for all houses with a minimum width of 750mm.
- b) Roof borne infrastructure (such as solar panels and air conditioning units) is preferred to be placed in locations where it is not visible from the street.

Figure 2 – Setbacks Diagram

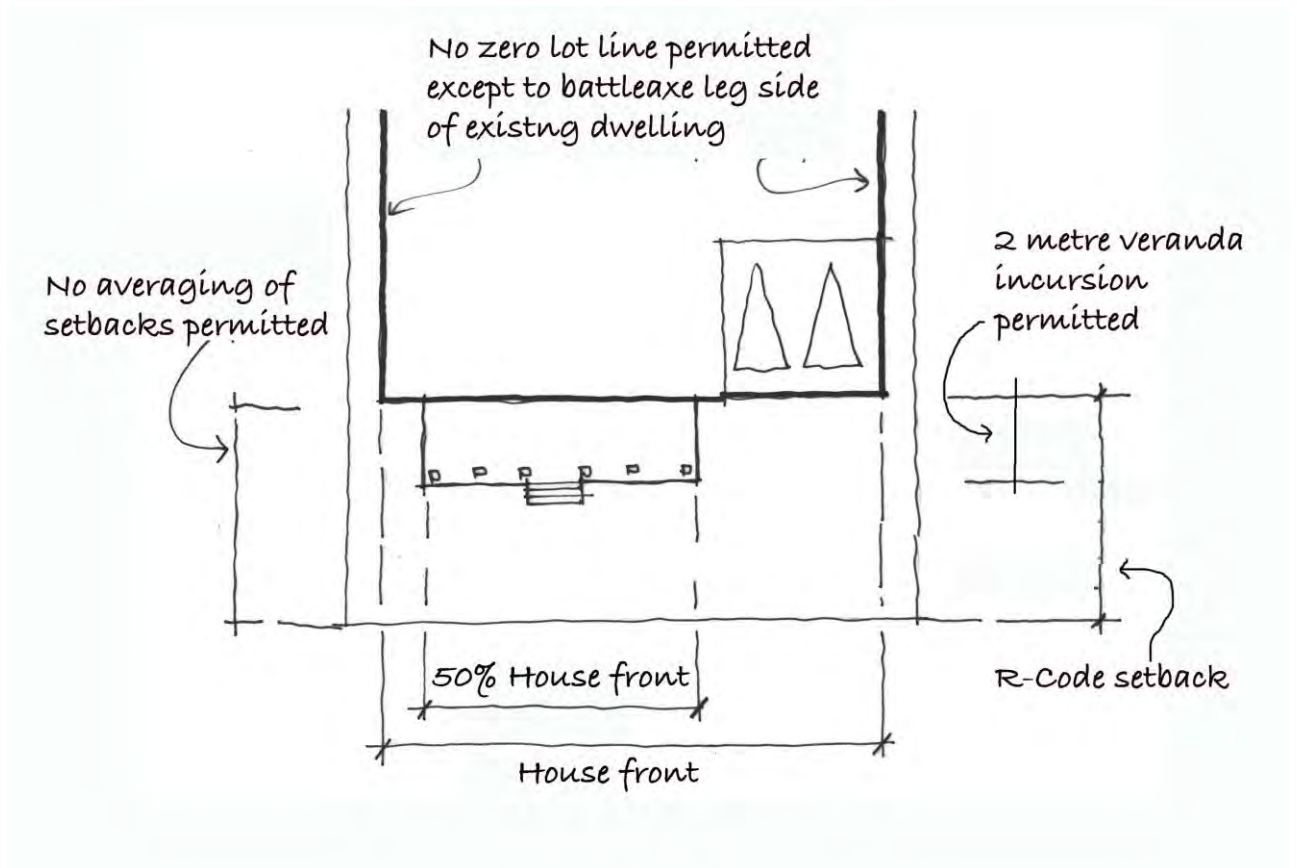
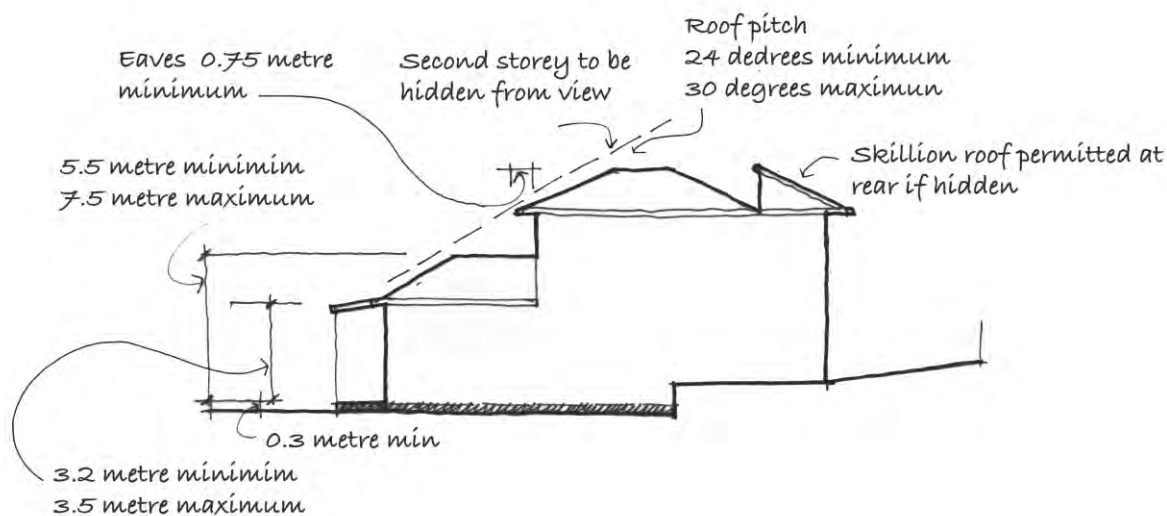
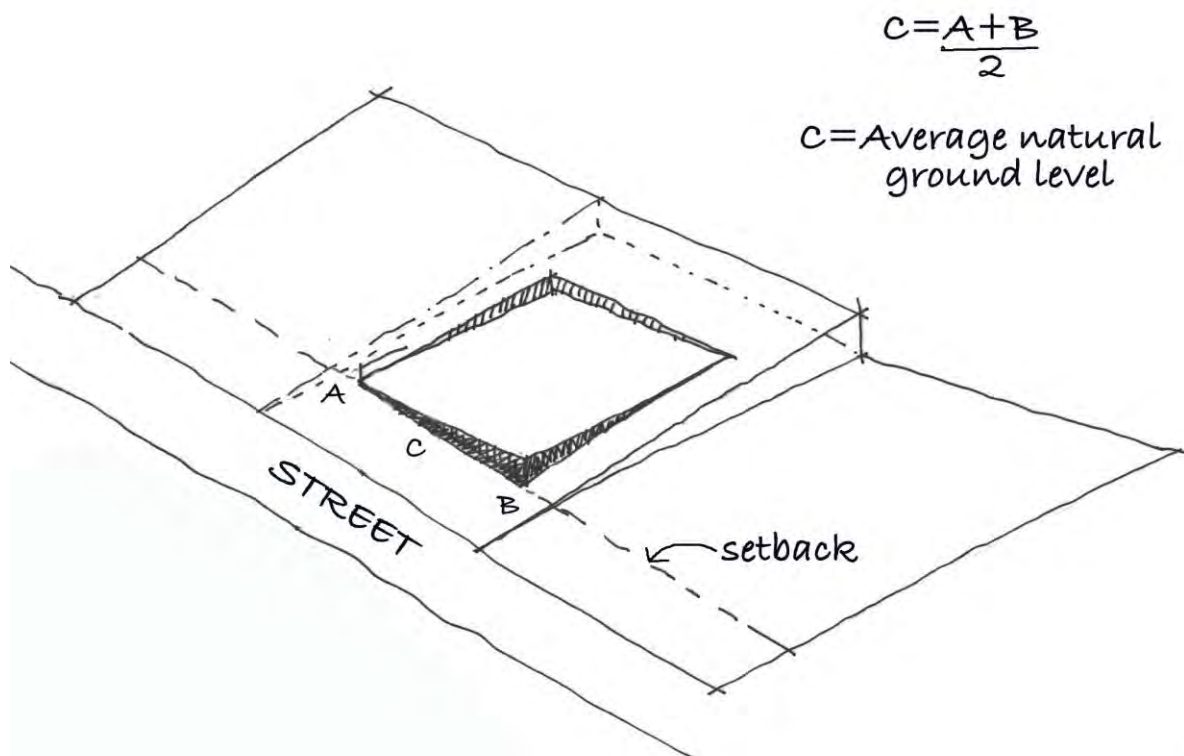


Figure 3 – height, mass and scale diagram



House Roofline and Pitch (Medina Only)

- a) Houses fronting the street are required to have pitched roofs at a minimum angle of 24 degrees and a maximum angle of 35 degrees. Skillion roofs are also permitted provided a single storey elevation and character is maintained when viewed from the street.
- b) Houses are permitted to use other contemporary roof forms, including flat roofs, provided that they are screened from view from the street.

- c) Eaves are required for all houses and are to be a minimum width of 750mm.

Refer to figure 3 – height, mass and scale diagram

Open Space (Medina Only)

Where minimum outdoor living area requirements are achieved, the provision of open space can be varied for the front dwelling in order to encourage single storey development, as provided for in Table 2.

Table 2–battleaxe subdivision open space variations

Density Coding	Open Space Variation Permitted
Medium Density Codes (Residential R30 – R60)	Can be reduced by an additional 5% of the site area.
Low Density Codes (Residential R2 – R25)	Can be reduced by an additional 10% of the site area.

Cut and Fill (Medina Only)

No modification to pre-existing natural ground levels will be permitted in front setback areas.

3.3 On-Site Vegetation and Planting

3.3.1 Objective

New development is to be responsive to any identified significant on-site vegetation and maintain opportunities for further planting in order to maintain and enhance the desired leafy character of the Town.

3.3.2 Guidelines (General)

- a) As part of any development proposal, it is recommended that significant on-site vegetation and the measures taken to minimise damage to this vegetation be considered. This can be achieved through careful consideration of how on-site vegetation may be able to be accommodated within future outdoor living areas and open space areas during the house design process.

- b) In the absence of any existing significant on- site vegetation or where it is not practical to retain such vegetation due its location, it is recommended that opportunities be identified for where substantial vegetation plantings can occur within areas of open space.
- c) In circumstances where battleaxe legs have been developed with the associated 0.5 metre landscaped and reticulated strip on either side of the constructed pavement, it is recommended that such landscaping be maintained to an appropriate standard to enhance the appearance of the site.

3.3.3 Guidelines (Medina only)

- a) As part of any development proposal, significant on-site vegetation and the measures taken to minimise damage to this vegetation will need to be demonstrated to the extent that it is practical to do so. This can be achieved through careful consideration of how on-site vegetation may be able to be accommodated within future outdoor living areas and open space areas during the house design process.
- b) In the absence of any existing significant on- site vegetation or where it is not practical to retain such vegetation due its location, opportunities are required to be identified for where substantial vegetation plantings can occur within areas of open space.
- c) In circumstances where battleaxe legs have been developed with the associated 0.5 metre landscaped and reticulated strip on either side of the constructed pavement, such landscaping will be required to be maintained to an appropriate standard as an on-going condition of development approval to enhance the appearance of the site.

3.4 Vehicular Access and Parking

3.4.1 Objective

To establish a residential built form appropriate for the location that minimises the impact of vehicular access arrangements and parking structures and that enhances the existing character of the Town's streetscapes.

3.4.2 Guidelines (General)

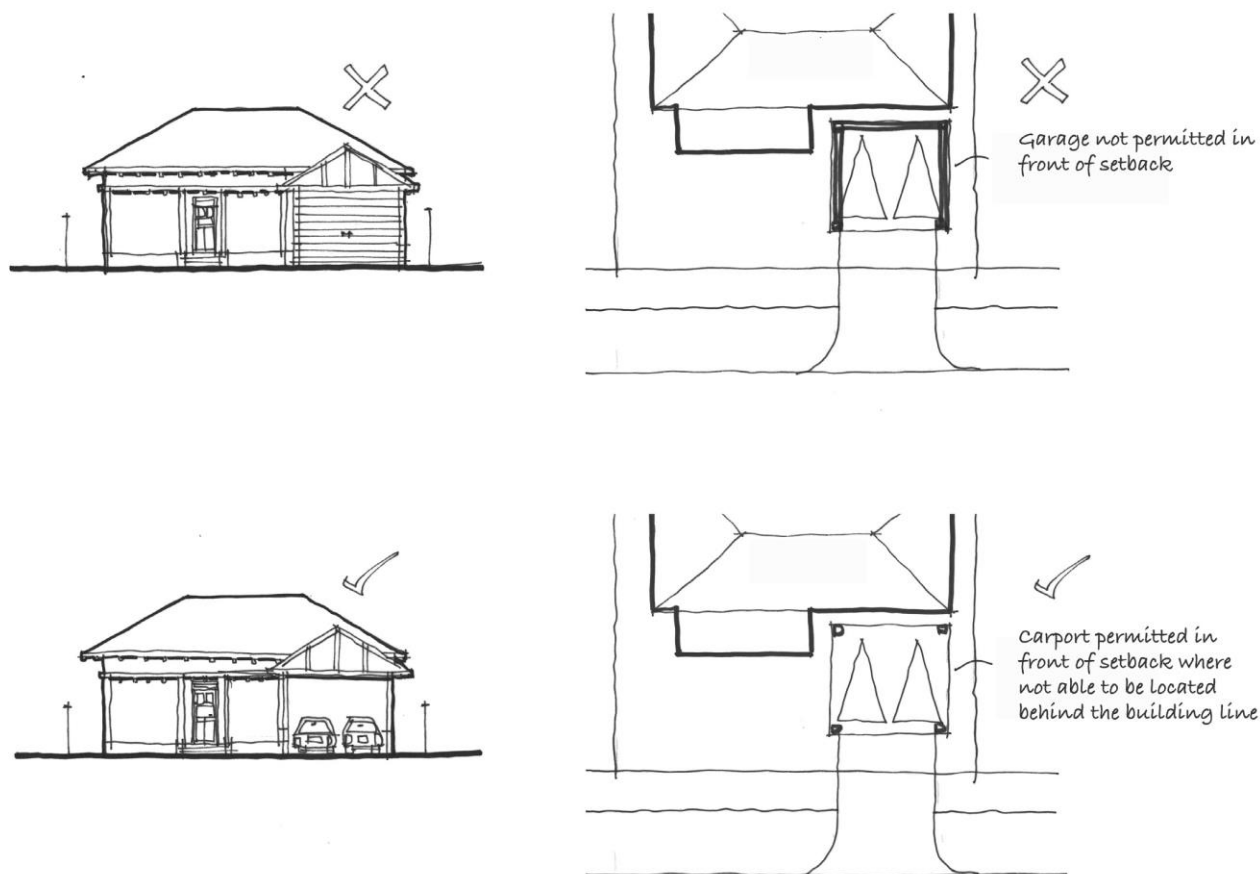
- a) No garages, carports (except as provided for in b) below) or solid garage or carport doors are permitted to be located in front of the primary building line.
- b) Visually permeable carports that maintain the capacity to view the front of the house are permitted to be located within the front setback area only in circumstances where they are not able to be located behind the primary building line.
- c) Carports forward of the building line are to be constructed with similar roof pitch and materials to the existing building in order to complement the streetscape.
- d) It is recommended that the front setback area of any houses be developed without hardstand car parking areas, except in the case where unenclosed visitors car parking is proposed, in which case a maximum of 25% of the front setback area should be hardstand.
- e) Access to parking structures is recommended to be provided by battleaxe access legs where available and practical to do so.

3.4.2 Guidelines (Medina only)

- a) The front setback area of any houses are to be developed without hardstand car parking areas, except in the case where unenclosed visitors car parking is proposed, in which case a maximum of 25% of the front setback area is permitted to be hardstand.
- b) Access to parking structures is required to be provided by battleaxe access legs where available and practical to do so.

Refer to figure 4 – preferred vehicular access and parking arrangements diagram

Figure 4 – preferred vehicular access and parking arrangements diagram



3.5 Fencing

3.5.1 Objective

To ensure that boundary fencing and in particular front fencing does not detract from the streetscape, defines allotments and allows for passive surveillance of public areas.

3.5.2 Guidelines (General)

General Requirements

- a) Fences that are proposed to be constructed from razor wire, cyclone fencing or any other material that the Town considers undesirable, or which contain spiky, jagged or dangerous features, will not be permitted.
- b) At the point where a driveway meets a public street, where two streets intersect, or where a laneway meets a public street, fences are required to be truncated or reduced in height to 0.9 metres above natural ground level within 1.5 metres of that point. Alternatively, fences are to be visually permeable above 0.9 metres in height within 1.5 metres of that point.

Refer to figure 5 – fencing permeability requirements diagram

Front Fencing

- a) Front fences, and the portion of side fencing located forward of the primary building line, are to be constructed of materials that are compatible with the scale and form of the existing or any proposed future development on the subject site.
- b) Front fences, and the portion of side fencing located forward of the primary building line are to be visually permeable (nominally 50% open) above 0.9 metres in height to a maximum height of 1.8 metres.

Refer to figure 1 – preferred subdivision and development configuration

Fencing to Secondary Streets

Those portions of boundary fencing that abut a secondary street and that do not screen an outdoor living area equal to or greater than 3.0 metres are to meet the relevant standards for front fencing as outlined above.

Refer to figure 1 – preferred subdivision and development configuration

Side and Rear Fencing

Side and rear fencing, unless otherwise provided for above, are to have a maximum height of 1.8 metres.

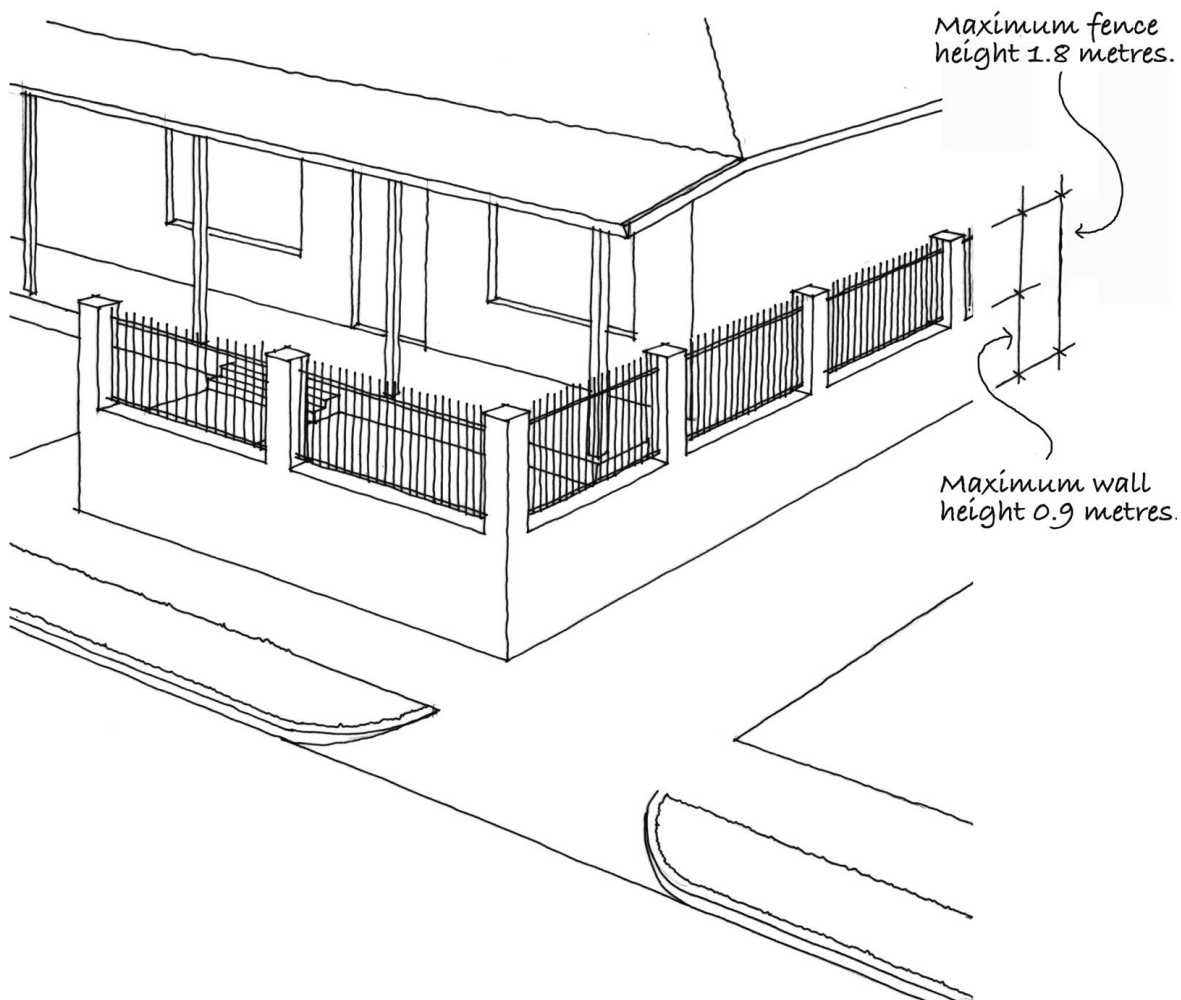
Refer to figure 1 - preferred subdivision and development configuration

Variations to Fencing Standards

The Town may allow variations to front fencing standards in the following circumstances:

- a) Where sites are subject to excessive vehicle movements or noise, headlight glare or other special requirements for privacy.
- b) Where the topography of the land results in an elevated front setback area the additional height may be added to the standards for fence height.
- c) Where architectural features such as gatehouses and porticos are proposed.
- d) Where it is proposed to erect temporary fencing such as that associated with a building site.

Figure 5 – Fencing permeability requirements diagram



A back courtyard privacy screen of up to 2.5 metres in height may be included between abutting house lots. The screen should be made from durable, high quality material and be no more than 70% solid. It should be designed to support the growth of deciduous vines.

3.6 Safety and Security

3.6.1 Objective

To ensure that all new development provides a sense of security and contributes to overall safety.

3.6.2 Guidelines (General)

Passive Surveillance and Defensible Space

- a) New houses are required to include windows and openings that ensure good visual connection between public and private spaces.
- b) Houses on rear battleaxe lots are required to be orientated in such a way so as to ensure that windows and openings maximise opportunities for passive surveillance over access legs.
- c) Porches, verandas and balconies should be located to ensure passive surveillance of neighbouring public spaces.
- d) Porches, verandas and balconies should be designed to accommodate furniture and encourage use. Balustrades should be visually permeable to reinforce the sense of openness and neighbourliness.
- e) A boundary fence should enclose the boundaries of each lot to clearly demarcate private space and to avoid unnoticed access to the property.

Refer to figure 6 – safety and security diagram

Lighting

- a) Lighting should help to illuminate entrances, footpaths and other less public areas (such as carports and outdoor open space areas).
- b) Additional lighting should be provided where street lighting is limited or screened. Where additional lighting is to be provided, it should be diffused or refracted to provide illumination with minimal glare.
- c) Lighting should be concealed under veranda roof overhangs or otherwise shielded to minimise glare.

- d) Generally, public street lighting will light streets and other public areas. Where existing lighting is considered by the landowner to be insufficient, additional lighting may be considered. Movement sensor lighting is encouraged, but should not be set off by movement beyond the site or create nuisance to neighbours.

Refer to figure 7 – lighting diagram

Figure 6 – Safety and security diagram

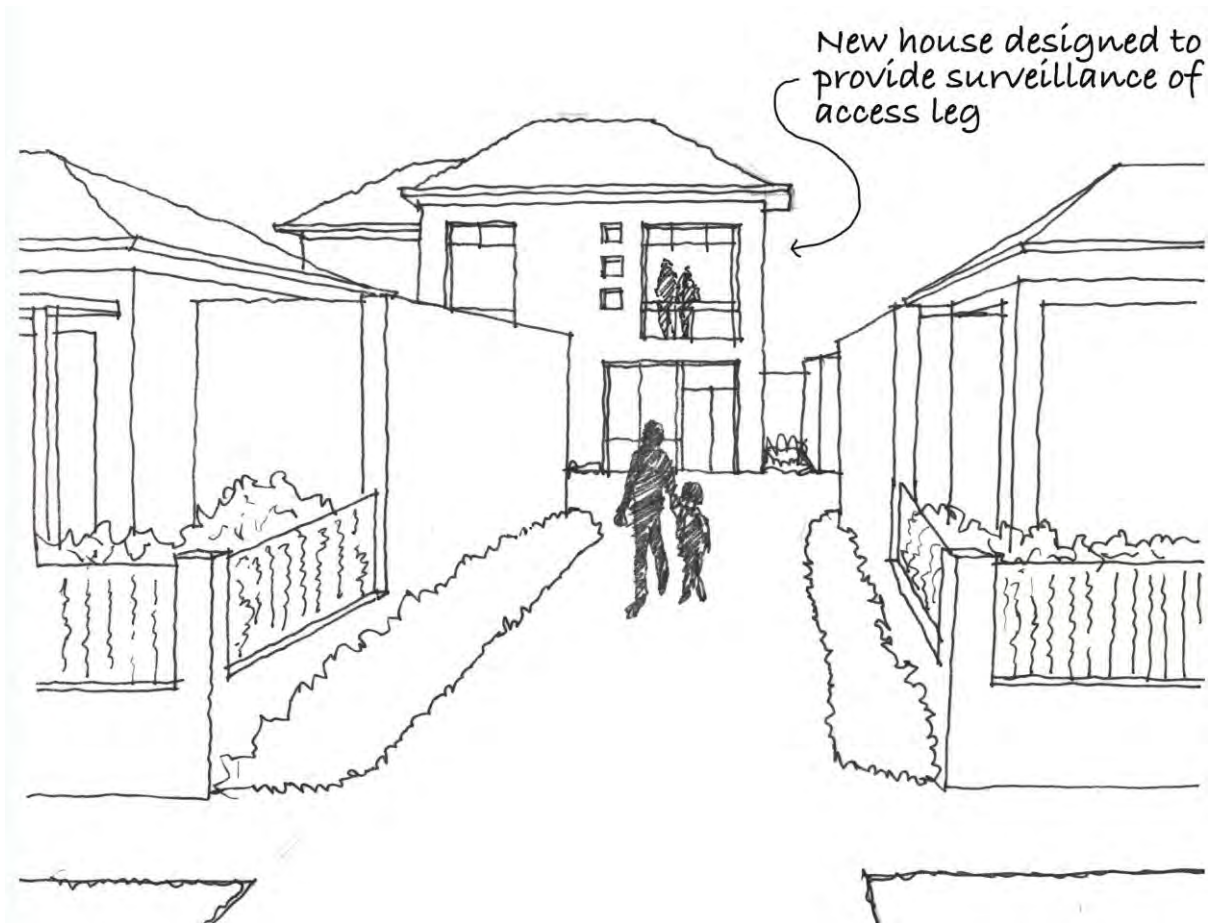
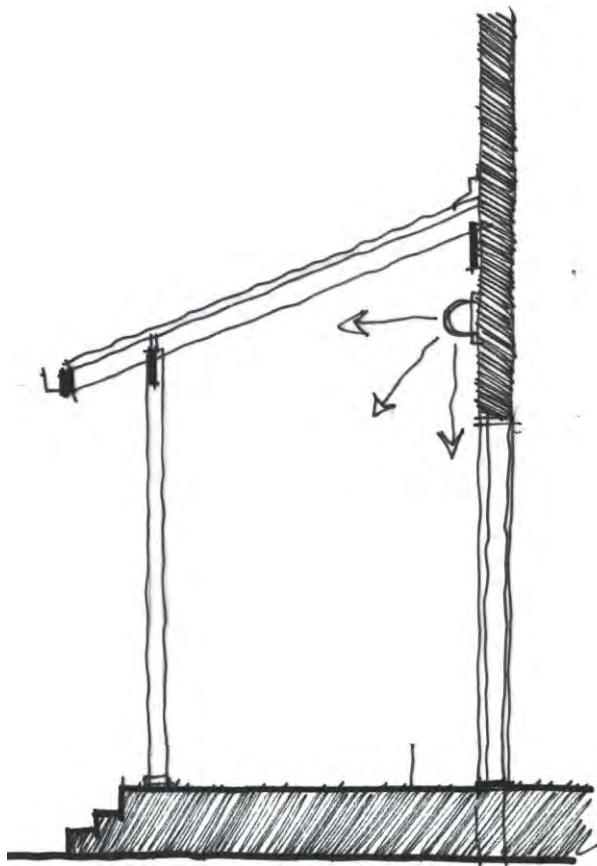


Figure 7 – Lighting diagram



Additional lighting is encouraged but shall be designed to minimise glare

3.7 Energy and Water Conservation

3.7.1 Objective

To ensure that conserving energy and water is considered and encouraged as part of any new development. The guidelines compliment the energy efficiency measures introduced into the Building Code of Australia (BCA) in July 2003.

3.7.2 Guidelines (General)

Passive Solar Design

- a) Houses should be designed to provide adequate thermal comfort for occupants whilst minimising the need for mechanical heating and cooling.
- b) Solar access to north-facing windows of living areas should be maximised.

- c) The size, location and shading of all windows and other openings should be considered with the aim of reducing summer heat load and allowing entry of winter sun.
- d) External clothes drying areas with access to breezes and sunlight should be provided in a secure place screened from public view, to help conserve energy by providing an alternative to electric dryers.

Refer to figure 8 - passive solar design diagram

Insulation and Weather Sealing

- a) Roof insulation should be installed to reduce heat intake and loss.
- b) Hot water pipes and heating and cooling services ductwork should be insulated.
- c) External doors and windows should be fitted with draught-excluding seals.

Air Movement

- a) Houses should be orientated to receive cooling breezes as much as is practical.
- b) Living areas should be capable of being closed off from other areas of the house to reduce the need to artificially heat or cool unused spaces.
- c) Ceiling vents, ceiling fans and/or louver windows, which provide for cross-ventilation of living areas should be provided.

Refer to figure 9 - air movement diagram

Building Materials

- a) Building materials, appliances and fuel sources should be selected to minimise energy requirements and greenhouse gas emissions.
- b) Materials of high thermal mass (such as concrete or tile floors) should be incorporated into living areas and located to maximise the absorption of heat from air circulating in the house and from the winter sun.
- c) Waste reduction methods and waste management (including recycling) during construction are encouraged including attention during design, estimating and materials selection.

Figure 8 - Passive solar design diagram

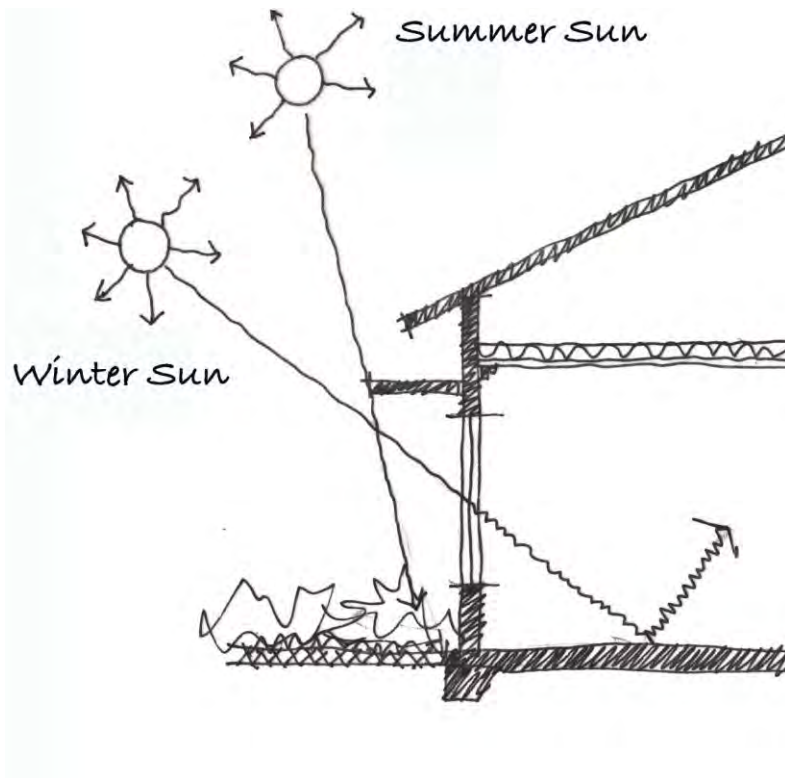
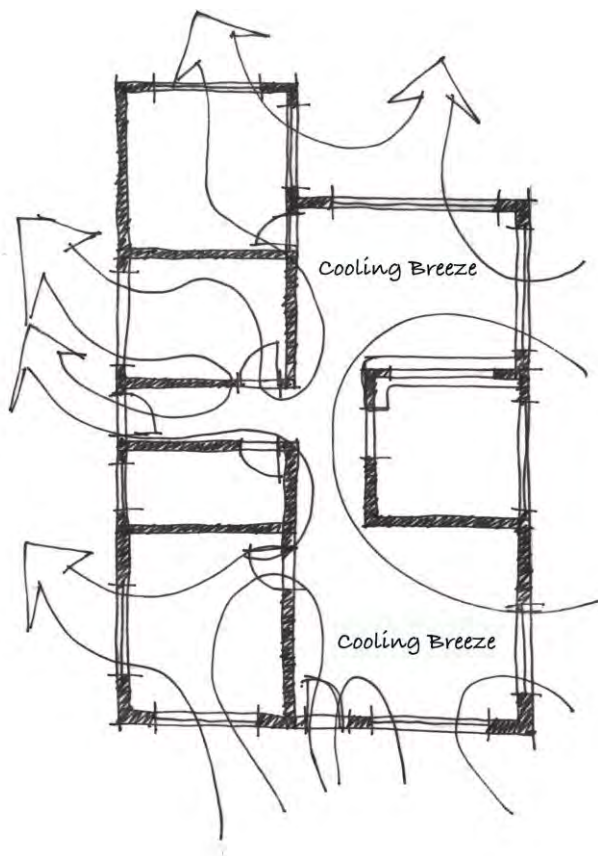


Figure 9 - Air movement diagram



Natural Light

Houses should be designed to allow sufficient daylight access to rooms without the need for artificial lighting.

Appliances

Energy and water conserving appliances and hot water systems that have a high star energy efficient rating should be selected.

Low Allergen Materials

- a) Use of low allergen construction materials and low allergen plants is encouraged.
- b) Where possible, and without compromising direct sunlight to living areas, positioning 'wet' areas of the house to receive direct sunlight to reduce mould growth is encouraged.

Water Harvesting

Installation of rainwater tanks is encouraged to contribute to water savings and minimise runoff into the drainage system.

Landscaping

- a) Landscaping should be designed to assist microclimate management and to conserve water.
- b) Plantings should be selected based on their capacity to shade windows to reduce summer heat load and permit entry of winter sun.
- c) Drought tolerant plants are encouraged and soils should be prepared with soil improvers and mulch.
- d) Grass areas should be minimised.
- e) Paved surfaces, including driveways and paths, should be of a segmented or small scale, or of a porous nature to facilitate water infiltration.