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# Sustainable Housing Principles

## 2.2 Design Guidelines for Site Layouts

# DESIGN GUIDELINES

FOR SUSTAINABLE HOUSING & LIVEABLE NEIGHBOURHOODS

*on behalf of the South Australian Housing Trust*



Government of South Australia  
SA Housing Authority

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

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### Introduction

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#### Background

Established in July 2018, the SA Housing Authority (SAHA) is a statutory corporation that administers the South Australian Housing Trust (SAHT) Act 1995.

The SAHA consolidates housing-related services and management of the housing stock; including strategy, service delivery, assets and related corporate supports; and plays a key role in enabling and supporting the State's modern, multi-provider housing system and in establishing an environment that promotes shared responsibility and ownership.

The SAHA is committed to providing housing that is socially and environmentally affordable and sustainable. To help achieve this, a suite of design guidelines for sustainable housing and liveable neighbourhoods that are applicable to all types of new residential construction, both rental and affordable have been developed.

The suite of design guidelines comprise the following:

- 1.1 House Design Guide
- 1.2 Amenity Targets
- 1.3 Apartment Design BCA Class 2 Construction
- 1.4 Housing Accommodation Schedules
- 1.5 Affordable and Market Housing
- 2.1 Land Titling and Service Infrastructure
- 2.2 Design Guidelines for Site Layouts
- 2.3 SAHT Universal Housing Design Criteria
- 2.4 Environmental Sustainability
- 3.1 Neighbourhood Renewal
- 3.2 Row and Terrace House Design
- 4.1 Housing Modifications
- 4.2 Generic Design Guidelines for House Renovations

Designers must understand and incorporate the requirements of these guidelines on all residential projects that involve land and properties owned by the SAHT. These guidelines assist designers in the interpretation of current policies and practices and include applicable features of the Good Design Guide SA historically published by Planning SA.

Some design compromise is acceptable to take into account site constraints and local planning conditions. All designs will be considered by the SAHA on merit. However, the minimum spatial dimensions needed to meet universal housing living requirements are generally not negotiable.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### This Design Guideline

The SAHT housed communities have historically been cooperative and readily accepting of shared spaces and facilities. However, it is recognised that in the planning of projects, tenancy management issues can intensify in medium density living arrangements. These issues include:

- Lack of clear delineation between private and public space;
- Increased disturbance, noise and visual impacts resulting from closer proximity of households; and
- Reduced security of property and persons due to increased distances between car parks and residences.

The SAHT's commitment to the creation of sustainable communities that are manageable, and successful tenancies that promote sustainable housing principles is reflected in its current newbuild construction program. This program also seeks maximum housing yields from available land. Paired housing units (semi detached housing) and small group housing developments are the currently favoured cost effective building solutions. These housing types, however, are mainly single storey, and increasing land costs and location issues are certain to dictate the introduction of more two storey housing.

This guideline seeks to build on the SAHT's experience by identifying design criteria that will address tenancy management issues through the SAHT principles for sustainable housing which require that dwellings be:

- Appropriate;
- Safe and secure;
- Accessible; and
- Environmentally efficient.

It contains a focus on safety and security beyond the essential requirements for new house construction and building maintenance and refurbishment of existing housing. It also applies principles relating to Crime Prevention through Environmental Design (CPTED) to various sites containing the following types of residential accommodation:

- Group housing (where two or more dwellings share common spaces, driveways and landscaping);
- Single detached dwellings;
- Semi detached dwellings;
- Double storey housing; and
- Row houses and terraces.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Scope

This guideline acknowledges the influence of urban infrastructure and road layout on housing type, housing design and housing layouts. It also differentiates private spaces (backyards) and common areas (frontages).

New construction is mainly single storey, however, land availability, finance and other pressures are seeing multi storey house types developed. The design issues associated with these house types are addressed within this guideline.

There are some areas that have been identified as requiring further consideration by designers and users, and which should be underpinned by these sustainable housing principles including:

- Spatial arrangements external to the house and the house plot;
- The application of CPTED principles to house design and the external environment; and
- Land titling and service infrastructure for group housing, for details refer to design guideline **2.1 Land Titling and Service Infrastructure**.

It is intended that this guide will be used for the development of:

- New housing projects;
- Neighbourhood renewal projects; and
- Project briefs for building maintenance and refurbishment projects.

Site, cost and infrastructure issues will define the scope and extent of these projects.

By following this guideline, users will reinforce our commitment to the creation of sustainable communities, which can be achieved by the provision of housing that is safe and secure, easily manageable, liveable and accessible.

### Sustainable Housing

Sustainable housing includes features that meet a diverse range of tenant requirements and which are subject to ongoing review to reflect building industry best practice for housing that is appropriate.

Appropriate design solutions that demonstrate sound investment are:

- Affordable;
- Well located;
- Quality product;
- Indistinguishable of similar appearance to well designed private sector housing and well integrated;
- Marketable and readily accepted by tenants and community; and
- Saleable.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

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### References and Acknowledgements

- *Better Neighbourhoods Program: Outcomes of Consultation with Regions* prepared by Natalie Fuller and Associates Pty Ltd, January 2002;
- Attorney-General's Department, Crime Prevention Unit;
- *Good Residential Design SA*, Planning SA.

# Designing Safe and Secure Public Housing

## Safety and Security

Safety and security in our homes and the broader environment is respected as a fundamental human need. For the SAHT:

- Safety is about preventing injuries in and around the home, and also the tenant's personal safety from crime and antisocial behaviour whilst in their home and the immediate housing site; and
- Security is about using design and fixtures or fittings to reduce opportunities for crime and antisocial behaviour against tenants' homes and within the immediate housing site.

### *Safety - Designing safe public housing for injury prevention*

The SAHT has a history of being at the forefront with respect to safety issues. Examples of this include specifying slip resistant floor coverings, and installation of anti-tilt brackets on cookers prior to the introduction of mandatory requirements.

Legislative requirements and revised electrical standards have led to the provision of:

- Smoke alarms (hardwired in new houses);
- Water temperature control devices to moderate maximum water temperature;
- Electrical safety switches (residual current device).

The suite of design guidelines have also ensured further refinements to housing with:

- Sufficient power points to avoid exposed electrical cords and double adaptors;
- Light switches and sockets within reach of each bed;
- Walking paths with firm even surfaces;
- Flooring that reduces the potential for falls and slips.

### *Security - Crime Prevention through Environmental Design (CPTED)*

The CPTED principles involve the application of 'natural' strategies and emphasize the use of subtle, unobtrusive measures to improve security. CPTED aims to influence people's behaviour in physical space whilst creating an aesthetically pleasing environment.

'Natural' strategies designed into the site at the outset usually require no additional cost: it is about building what is usually required and doing it better. Where extra cost is involved, it usually results in a significant return on investment due to increased profitability of the housing, reduced liability and less management required. 'Natural' strategies and design concepts also subtly influence people's behaviour without impacting on their anxieties.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Natural Surveillance

Natural surveillance is a design concept directed primarily at creating opportunities for people engaged in their normal behaviour to observe the space and people around them. Buildings and space are designed to ensure that visibility is maximised and people have clear sightlines. Natural surveillance creates a perception of risk for potential offenders (as offenders do not like to be observed), whilst also enhancing feelings of safety in users of the space.

### Natural Access Control

This design concept is directed primarily at decreasing crime opportunity by clearly defining the ownership of space, ie, private, semi private, public, and controlling or limiting access and movement. It can create a perception of risk for an offender because they are a noticeable intruder in a space that is clearly not public.

### Territorial Reinforcement

Territorial reinforcement is about creating, or extending a sphere of influence so that users or people living in a defined area, such as a housing site, develop a sense of ownership over the particular space. It is essentially about creating a sense of 'turf'. People usually protect territory that they feel is their own, and an area that looks protected gives the impression to a potential offender that greater effort will be needed to commit a crime. An environment that is obviously cared about can also reduce fear of crime.

## Duty of Care and the Disability Discrimination Act

Group housing sites have common spaces that are publicly accessible, so the design and construction of these areas must meet all reasonable requirements. The application of these sustainable housing principles, will assist to meet the duty of care obligations to SAHT tenants and the general public.

On older sites many of these issues may require further review and is beyond this scope.

## Checklist and Project Review

At project review stages the housing layout design must be checked to demonstrate these sustainable features:

- Are all common spaces active?
- Are all front entrances visible from address point?
- Are private spaces private?

## Guiding Design Principles

The SAHT aims to create housing that provides users with a sense of security and ownership. Achieving environments and homes that maximise safety and security from crime and anti social behaviour is facilitated by a range of approaches that influence people's behaviour and attitude towards:

- One another;
- Their own and other people's property;
- The immediate area in which they live.

An important strategy that underpins all approaches to safety and security is the way we design our living areas (housing) and the surrounding environment. Both active and inactive spaces help to provide 'natural' functions or activities to areas adjacent the public realm, eg, front yards. The private spaces of housing, eg, backyards, may be divided any way one occupant in one house or multiple occupants in multiple houses see fit.

### Active Spaces

Active spaces are those where activity should be encouraged. In the public realm (common land) these are the streets, paths and landscaped recreational areas. Safety and usability is assured when active spaces are in constant use and are observable by all. In group housing these spaces must be able to be frequented by all the residents and overlooked by houses, eg, frontage windows (the 'eyes on the street' principle of 'natural surveillance' of CPTED).

Open front gardens (unfenced house frontages) are not active spaces. By design they are clearly associated with the dwelling and are 'owned' by the dwelling occupier. The land is either designated in the tenancy agreement to be maintained by the tenant, or is adjacent other common lands and is maintained by SAHA. Irrespective of maintenance agreements the proximity of this space to housing frontage must respect both the 'natural surveillance' and 'territorial reinforcement' principles of CPTED.

### Inactive Spaces

Inactive spaces are often those spaces left over after the design process, or spaces not prescribed with a clear function. Inactive spaces are not always able to be totally eliminated; and those that are unavoidable should be managed in a way that ensures safety and security. Considerations should include:

- Long, high fences do not promote activity as they are often screened by landscaping (which also helps to reduce graffiti);
- People have no reason to go near inactive spaces (unless they form the boundary to a pedestrian pathway);
- Vehicle driveways cannot be considered active if they are long (activity occurs at parking areas where people stop and open doors, etc);

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

- 1.80m high fencing is deemed inactive and lengths must be minimised;
- The reduction of total common space area can reduce inactive zones;
- Maximising the number of house frontages facing common spaces provides more natural surveillance;
- Maximise sightlines;
- Eliminate all hidden return spaces, eg, no hidden corners (even for utility meter boxes);
- All foreground landscaping should be low, eg, maximum 600mm high at mature stages;
- Trees should have clear trunks to 2.00m high, eg, no hanging branches below 2.00m.

Generally, the aim for designers is to eliminate undefined and 'unowned' space. All areas should be formally delineated by the use of fencing or informally delineated with kerbs, paving or clearly definable building projection lines.

### Fencing

There is a need to distinguish between front fencing and rear yard privacy fencing:

- Front fencing is usually lower and transparent and is a general enhancement to street frontage;
- Rear yard fencing is typically 1800mm high and provides privacy to private open space.

Some sites may not require the retention of front fences so as to facilitate an open street. In other circumstances the retention of front fences is for reasons of safety and security, eg, along busy roads and on corner blocks.

### Home Security

The SAHT requires at a minimum:

- Screened safety doors;
- Solid core external doors;
- Keyed alike locks to all external doors;
- A peephole in the front door.

The SAHT does not support the provision of deadlocks or any device that requires a key to let a person out of the building. For duty of care reasons the SAHT will place matters of personal safety ahead of security of property.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Design Considerations for Front Entrances

For visitor arrival and user friendliness these design considerations must be addressed:

- Front entrances must be safe to use with good lighting;
- Easy to find and visible;
- Porch design;
- Lighting should be accessible from the inside for the residents' amenity and well being;
- Create a line of site from front living areas and front doorway to the letterbox locations (address point) and out to the street for passive surveillance.

### Design Process

Principles of good design rely on a collaborative process that includes consultation with all stakeholders:

- Technical specialists;
- Customers and users;
- Approved authorities.

The Authority also encourages the submission of indicative site layouts of group sites for initial review before proceeding to final layout plans.

### Design Summary Principles

- Active areas reduce crime;
- Maximise house frontages to achieve 'eyes on the street'
- Ensure front doors (primary entry points) have direct sightlines to street or letterbox area;
- Maximise adjacent and adjoining backyards;
- Inactive areas increase risk of crime;
- Minimise high 'backyard' fencing facing group housing common space;
- Avoid hidden return spaces (that are not overlooked);
- Reduce impact of vehicle circulation (recess carports and avoid large areas of paving);
- Dwellings should be sited so as to not significantly overshadow neighbouring dwellings and private open space (POS);
- Required POS should have a northern orientation (generally a desirable planning attribute).

### Design Applications for New Projects

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#### Single Detached Dwelling

*Refer Figure 1.*

##### Site Constraint Checklist

- Site coverage (plot ratio);
- Front setback;
- Side setbacks;
- Private open space;
- Visitor parking;
- Proposed significant trees and/or street tree removal.

##### Additional Constraints

- Maximise house facade site frontage (subject to orientation);
- Perimeter paving to SAHT universal requirements;
- Site fencing to SAHT construction requirements;
- Carport or garage to SAHT universal requirements;
- Additional paving and hard standing (if applicable) to:
  - Letterboxes
  - Garbage collection
  - Clothes lines
- Consider the impact of overshadowing to neighbouring dwellings;
- Required private open space should have a northern orientation;

Traditional Single Lot Development

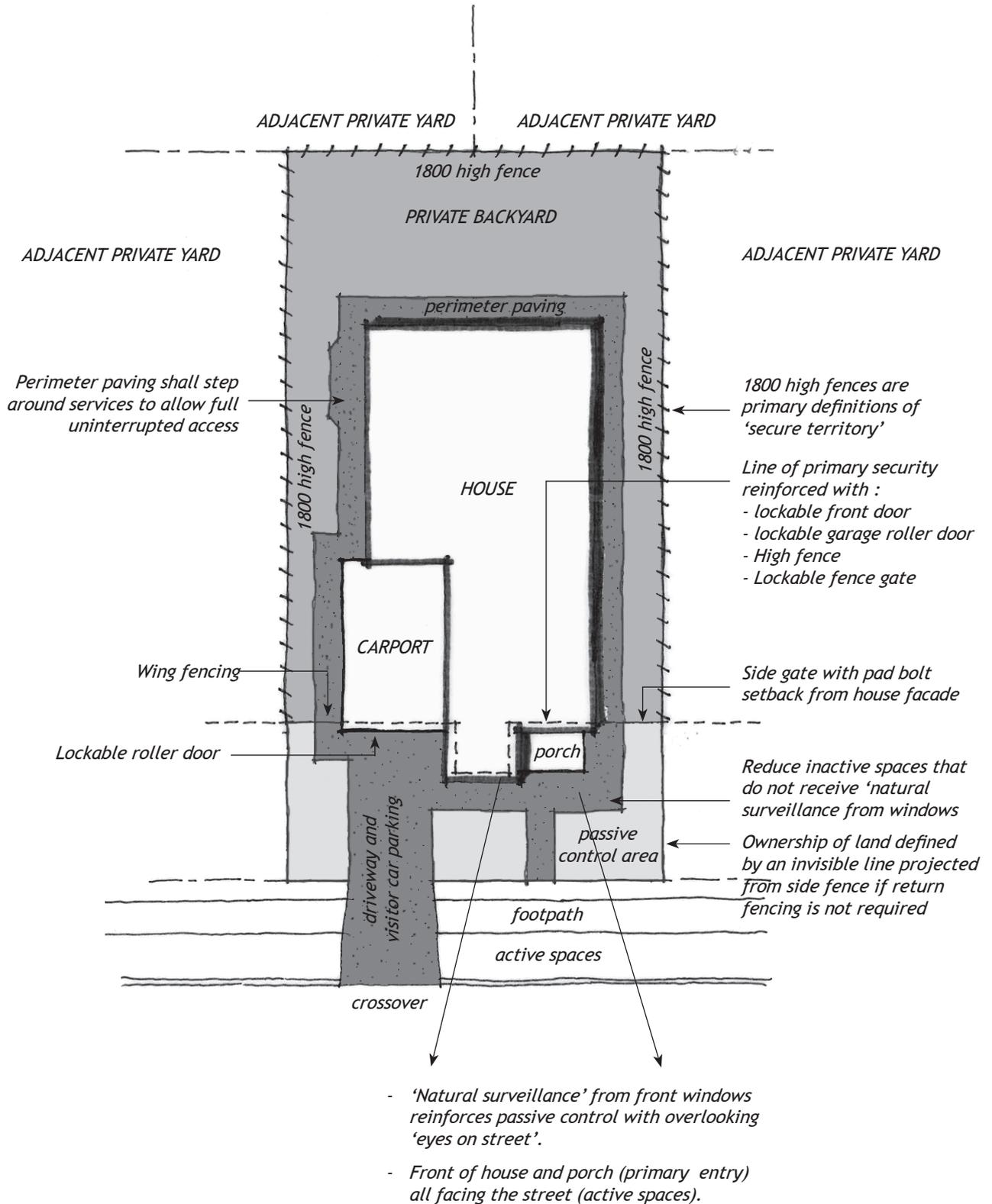


Figure 1: Single Detached Dwelling

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

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### Group Housing Sites

*Refer Figure 2.*

#### Site Constraint Checklist (to council requirements)

- Site coverage (plot ratio);
- Front setback;
- Side setbacks;
- Rear setbacks;
- Private open space;
- Visitor parking;
- Proposed significant trees and/or street tree removal;
- Driveway, common roadway and turning bays.

#### Additional Constraints

- Maximise house facade site frontage;
- Perimeter paving to SAHT universal requirements;
- Site fencing to SAHT construction requirements;
- Carport or garage to SAHT universal requirements;
- Additional paving and hard standing (if applicable) to:
  - Letterboxes
  - Garbage collection
  - Clothes lines
- Consider the impact of overshadowing to neighbouring dwellings;
- Required private open space should have a northern orientation;
- Ensure provision of vehicle turning bays to allow vehicle exit in a forward gear;
- Houses should have a mix of footprints.

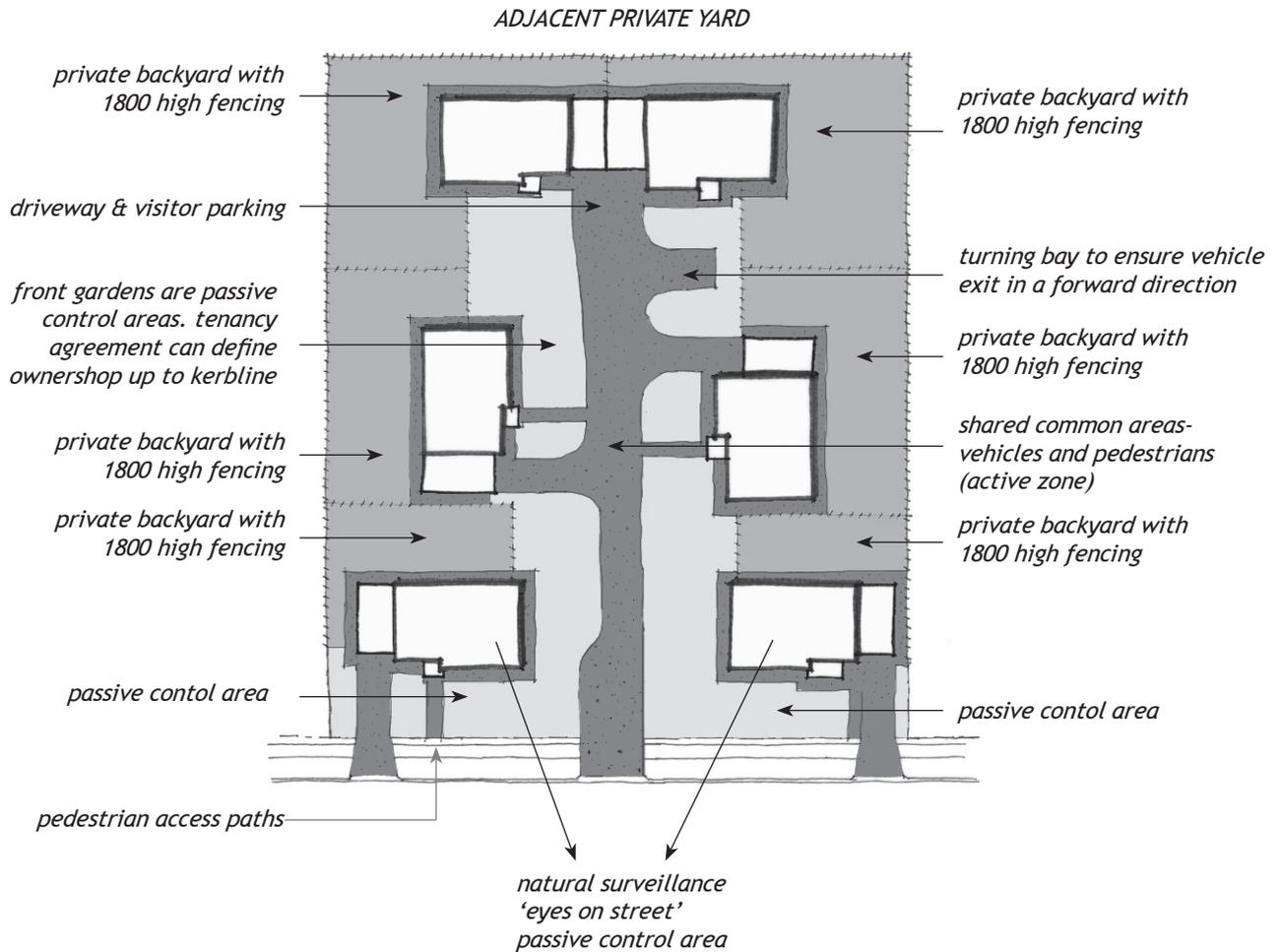


Figure 2: Group Housing Sites

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

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### Corner Blocks

*Refer Figure 3.*

#### Site Constraint Checklist (to council requirements)

- Site coverage (plot ratio);
- Front setback (primary frontage);
- Side street setbacks (secondary frontage);
- Side setbacks;
- Rear setbacks;
- Private open space;
- Visitor parking;
- Proposed significant trees and/or street tree removal.

#### Additional Constraints

- Maximise house facade site frontage;
- Perimeter paving to SAHT universal requirements;
- Site fencing to SAHT construction requirements;
- Carport or garage to SAHT universal requirements;
- Additional paving and hard standing (if applicable) to:
  - Letterboxes
  - Garbage collection
  - Clothes lines
- Consider the impact of overshadowing to neighbouring dwellings;
- Required private open space should have a northern orientation.

#### CPTED Considerations

Advantages:

- Additional life to side street (or cul-de-sac);
- More 'eyes on street'.

#### Amenity

- Fencing to corner blocks, main roads and bus routes, refer figures 8, 9, 10 and 11.

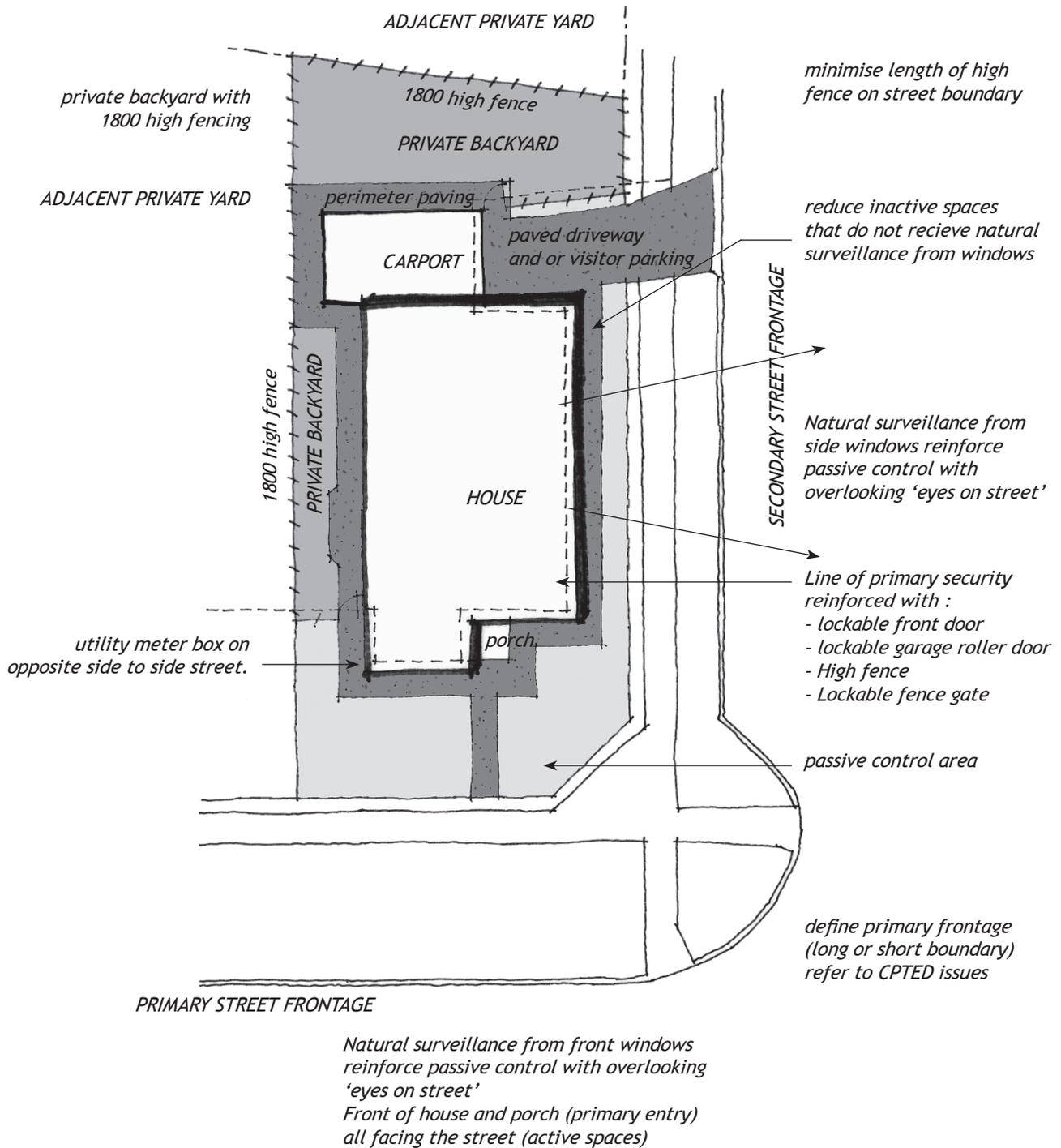


Figure 3: Corner Blocks

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

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### Semi Detached Housing

*Refer Figures 4 and 5.*

#### Site Constraint Checklist (to council requirements)

- Site coverage (plot ratio);
- Front setback (primary frontage);
- Side street setbacks (secondary frontage);
- Side setbacks;
- Rear setbacks;
- Private open space;
- Visitor parking;
- Boundary wall lengths;
- Proposed significant trees and/or street tree removal.

#### Additional Constraints

- Maximise house facade site frontage;
- Perimeter paving to SAHT universal requirements;
- Site fencing to SAHT construction requirements;
- Carport or garage to SAHT universal requirements;
- Additional paving and hard standing (if applicable) to:
  - Letterboxes
  - Garbage collection
  - Clothes lines
- Consider the impact of overshadowing to neighbouring dwellings;
- Required private open space should have a northern orientation.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

- Natural surveillance and security issues, passive control areas and inactive spaces, refer Single Detached Dwelling section.
- Houses should be a mix of footprints, avoid mirror imaging.

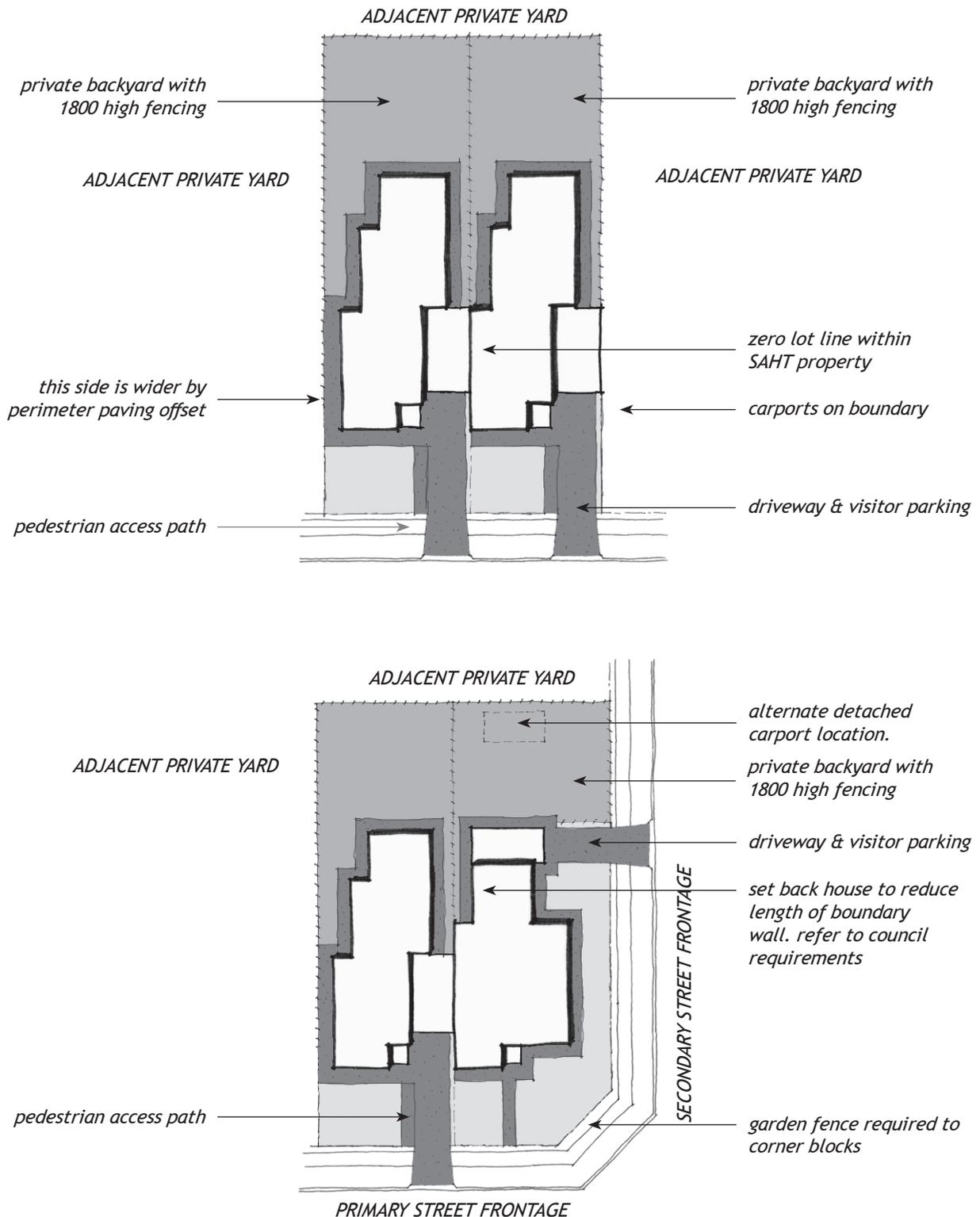


Figure 4: Semi Detached Housing - Option 1

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

- Natural surveillance and security issues, passive control areas and inactive spaces, refer Single Detached Dwelling section.
- Houses should be a mix of footprints, avoid mirror imaging.

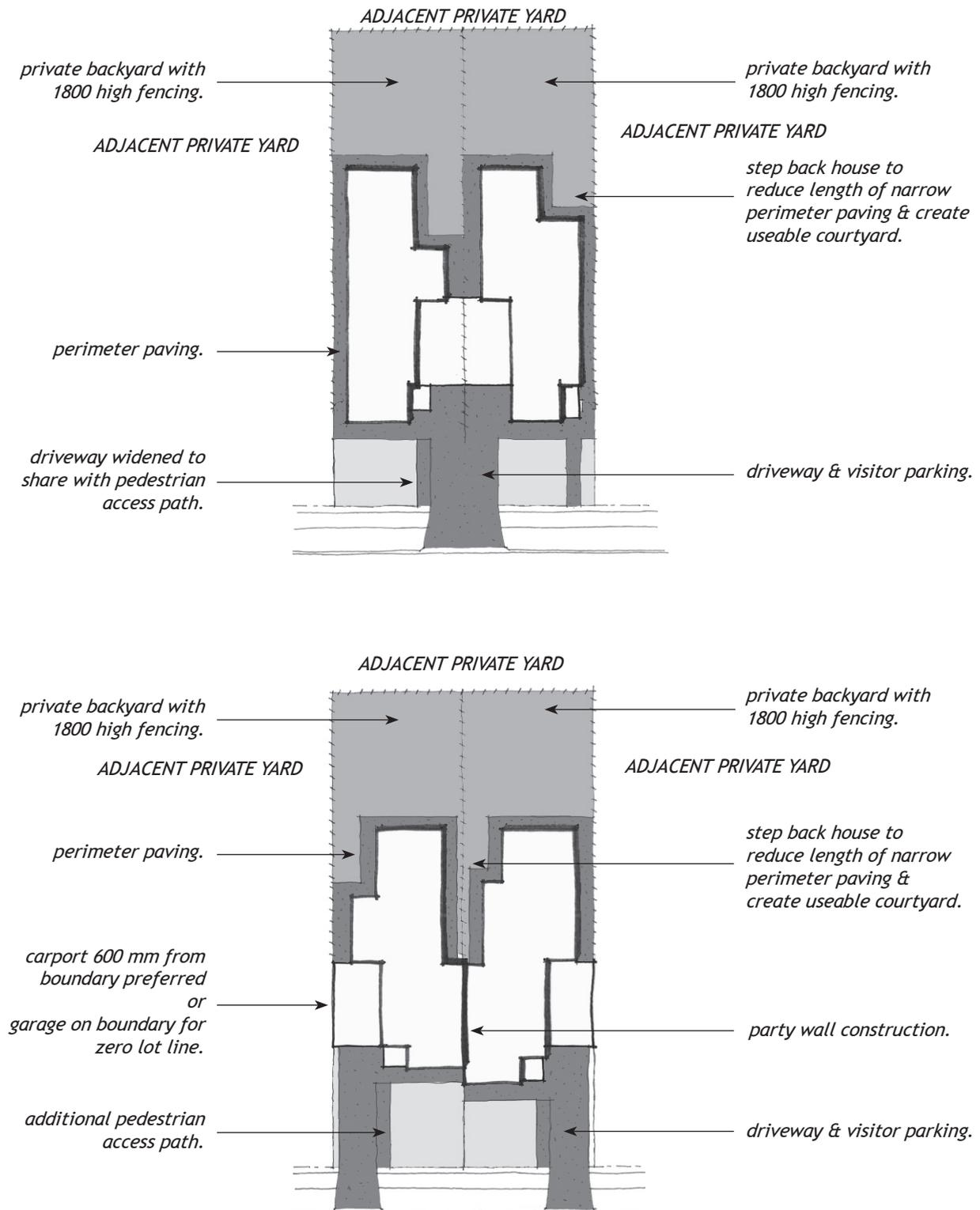


Figure 5: Semi Detached Housing - Option 2

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Small Lot Medium Density Housing (Single or Double Storey)

Refer Figure 6.

#### Design Requirements

- Single or double storey and may be single storey in two storey group (to minimise overlooking of neighbours);
- Natural surveillance and security issues, passive control areas and inactive spaces;
- Ensure provision of turning bay for vehicle exit in a forward gear;
- Houses may be mirror image or a mix of footprints;
- 1800mm high privacy fencing should not project forward of building set back. Reduce to 900mm or 1200mm high where a garden fence is required forward of the building setback.
- Provide good levels of external lighting for common access areas

#### Site Constraint Checklist (to council requirements)

- Site coverage (plot ratio);
- Front setback (primary frontage);
- Side street setbacks (secondary frontage);
- Side setbacks;
- Rear setbacks;
- Private open space;
- Visitor parking;
- Boundary wall lengths;
- Proposed significant trees and/or street tree removal;
- Driveway, common roadway and turning bays.

#### Additional Constraints

- Maximise house facade site frontage;
- Perimeter paving to SAHT universal requirements;
- Site fencing to SAHT construction requirements;
- Carport or garage to SAHT universal requirements;
- Additional paving and hard standing (if applicable) to:
  - Letterboxes
  - Garbage collection
  - Clotheslines
- Consider the impact of overshadowing to neighbouring dwellings;
- Required private open space should have a northern orientation.

### Provide mix of housing

- Two and three bedroom;
- One and two storey.

### Rear Unit Variation

- Potential for three bedrooms with larger rear yard;
- May be single storey in two storey group (to minimise overlooking of neighbours).

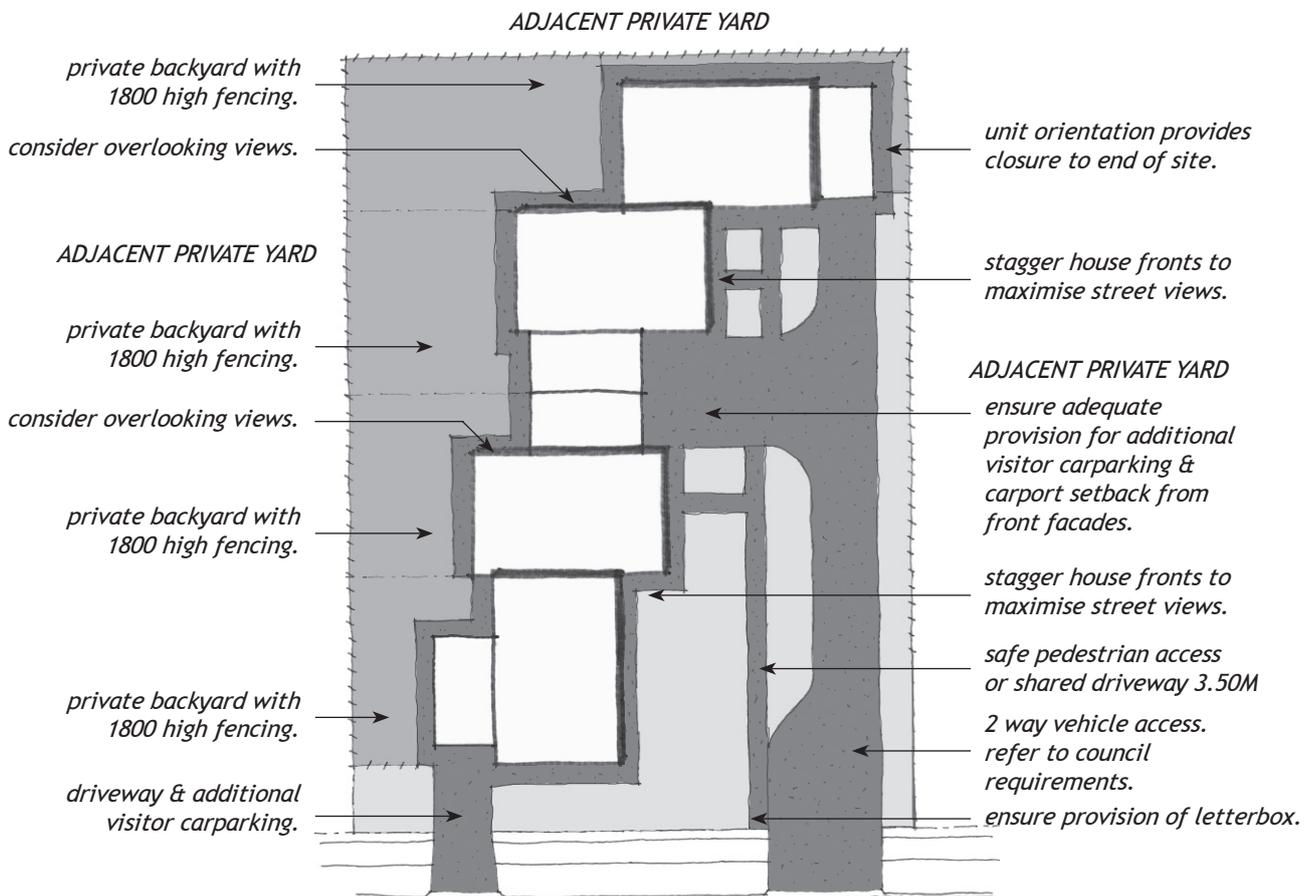


Figure 6: Small Lot Medium Density Housing

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Row Housing and Terraces

Refer Figure 7.

#### Site Constraint Checklist (to council requirements)

- Site coverage (plot ratio);
- Front setback (primary frontage);
- Side street setbacks (secondary frontage);
- Side setbacks;
- Rear setbacks;
- Private open space;
- Visitor parking;
- Boundary wall lengths;
- Proposed significant trees and/or street tree removal.

#### Additional Constraints

- Maximise house facade site frontage;
- Perimeter paving to SAHT universal requirements;
- Site fencing to SAHT construction requirements
- Carport or garage to SAHT universal requirements;
- Additional paving and hard standing (if applicable) to:
  - Letterboxes
  - Garbage collection
  - Clotheslines
- Consider the impact of overshadowing to neighbouring dwellings;
- Required private open space should have a northern orientation.
- Natural surveillance and security issues, passive control areas and inactive spaces, refer section on Single Detached Dwelling;
- Houses may be a mix of footprints;
- Reduce depth of house where practical to maximise street frontage.

*Note: Refer to separate sections for Driveway Guidelines, Fencing Guidelines, Car Parking, Garbage Collection and Bin Storage, Landscape and Site Lighting and Solar Orientation.*

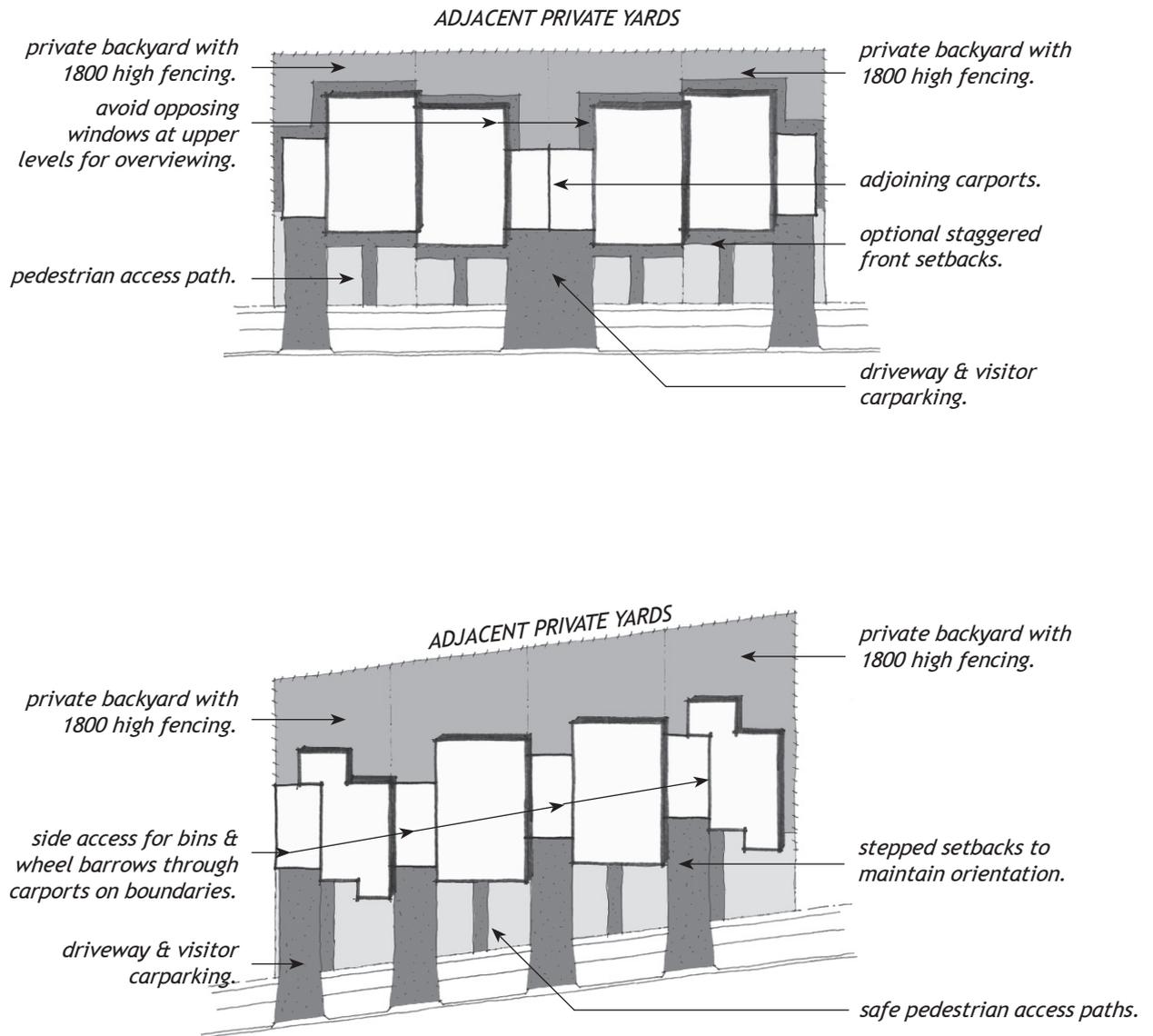


Figure 7: Row Housing and Terraces

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Apartment Developments

Site layout principles for group housing are directly applicable to apartments in respect of the use and management of common space, landscaping and carparking standards.

### Driveway Safety

Refer Figures 8,9,10,11,12,13 and14.

Vehicle accident statistics in Australia show a disproportionate number of low speed driveway incidents. The accidents have occurred with low speed reversal movements involving small children with fatal results.

The implications for the SAHT is to make provision for separation of pedestrian access to house frontages with clearly defined paving to front doors, and ensure driveways are designed in such a way to provide maximum driver vision and avoidance of pinch points between paving edges and fencing or high/thick landscape.

In this respect, the following shall apply:

- A clear unobstructed width for a driveway access is deemed to be 3.50 metres (the paved width and landscape bed of low ground cover or grass);
- Minimum pavement width of 3.50 metres for a shared pedestrian and vehicle roadway.

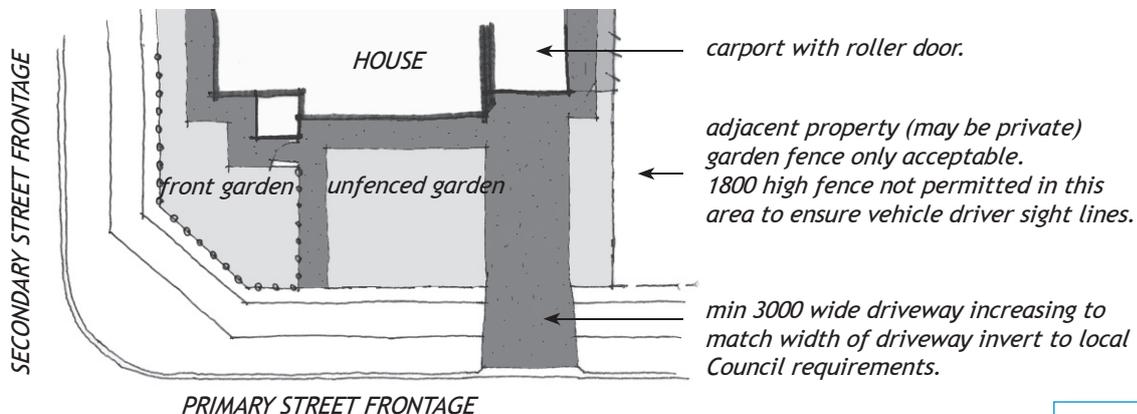


Figure 8: Driveways and Front Fencing - Preferred Option

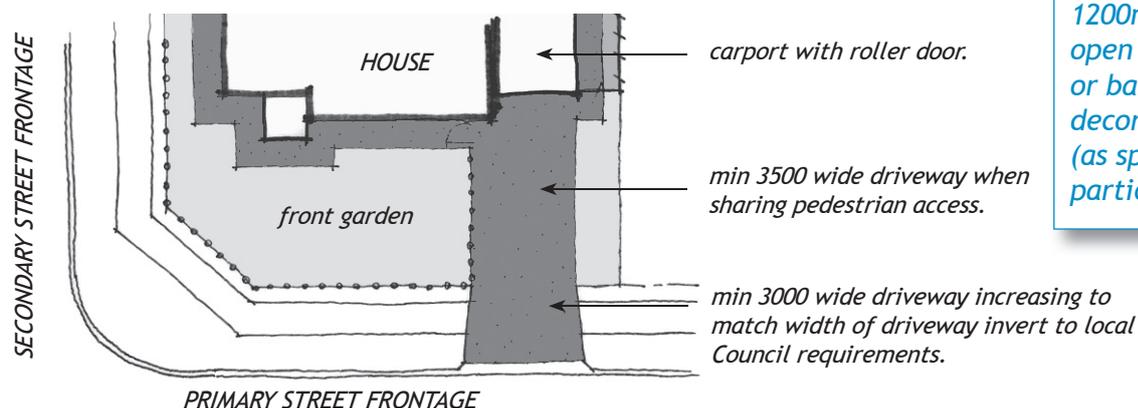


Figure 9: Driveways and Front Fencing - Acceptable Option

**Note:**

Garden fencing is generally 900mm to 1200mm high with open weave mesh or bars with simple decorative details (as specified for particular projects)

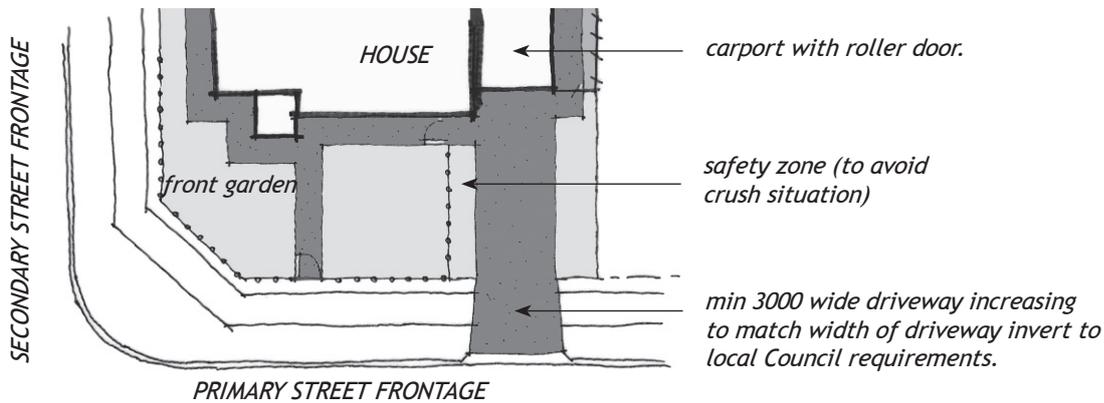


Figure 10: Driveways and Front Fencing - Not Preferred

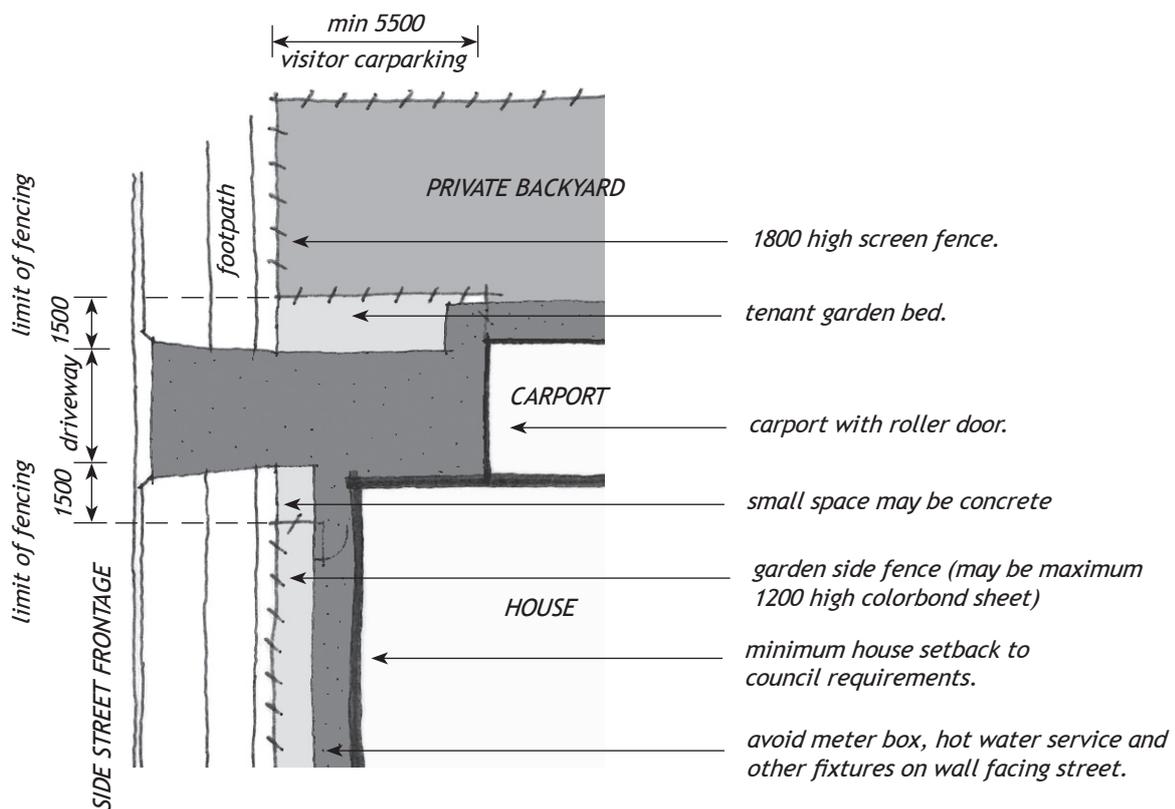
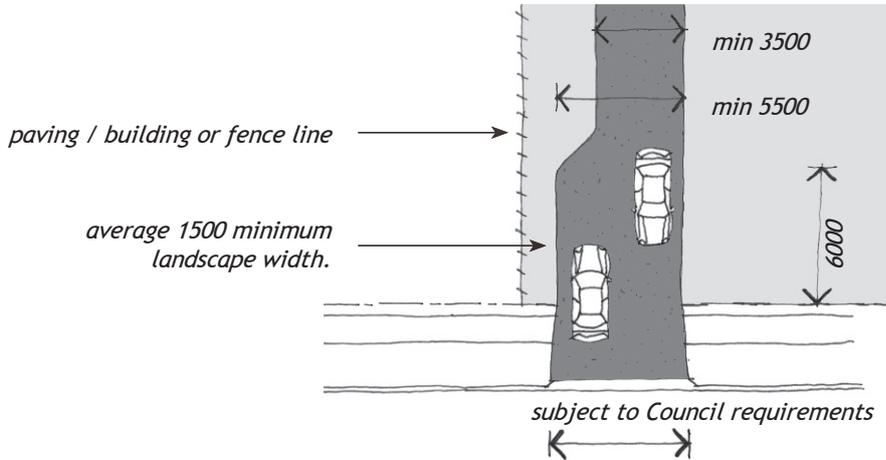


Figure 11: Driveways and High Fencing

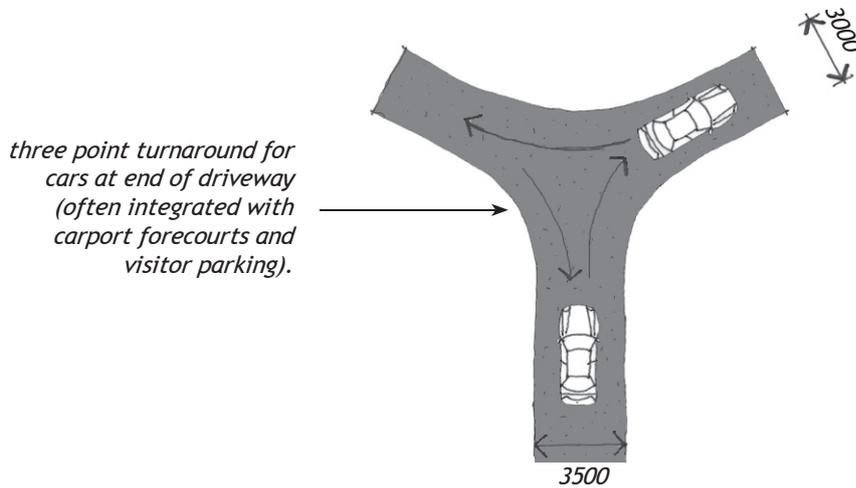
Notes: Refer to CPTED - Create activity and 'eyes on street'.  
Secondary frontage only for corner sites.

Driveways and Group Housing



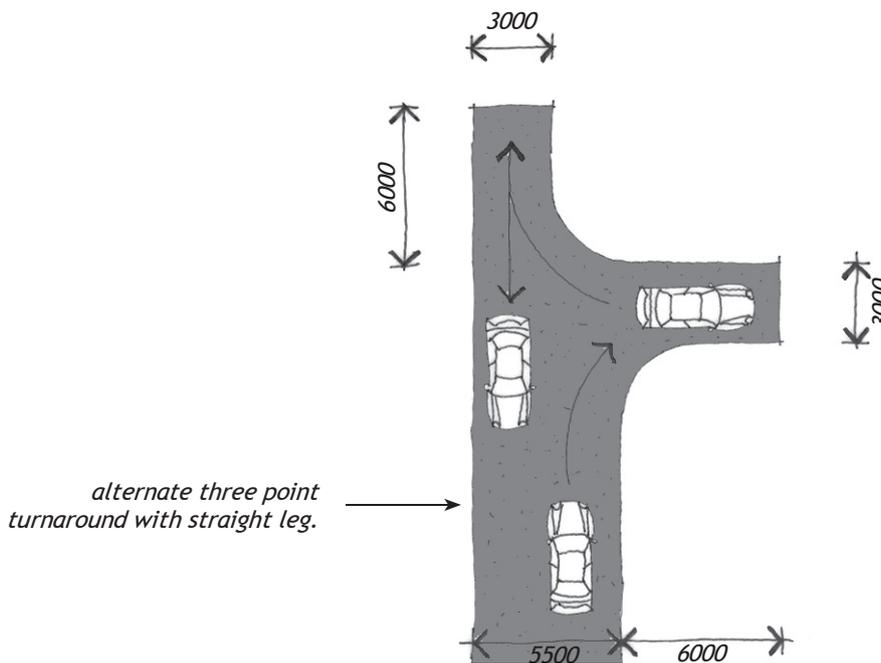
Driveways in group housing may also be combined with pedestrian access to dwellings.

Figure 12: Driveway Entrance



Driveways are normally not accessible to large vehicles or garbage collection.

Figure 13: Turning Bay - Option 1



Refer to Australian Standards for driveway dimensions.

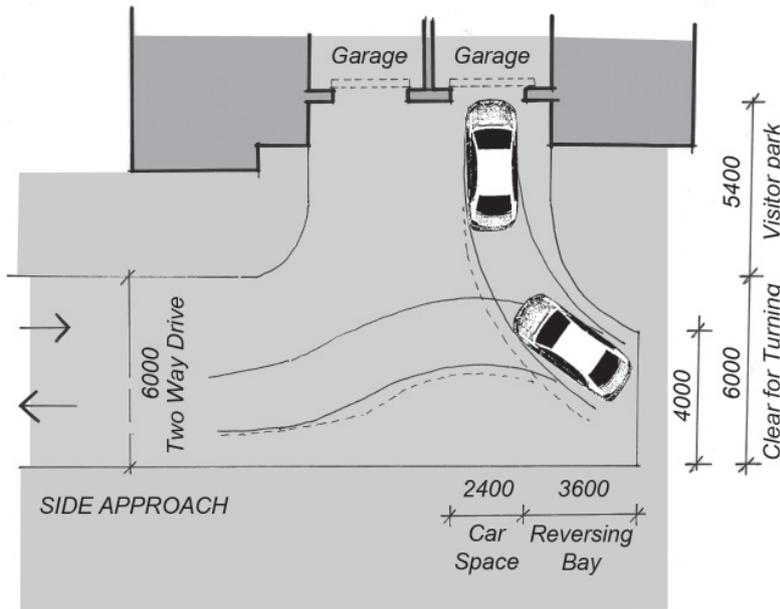
Figure 14: Turning Bay - Option 2

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

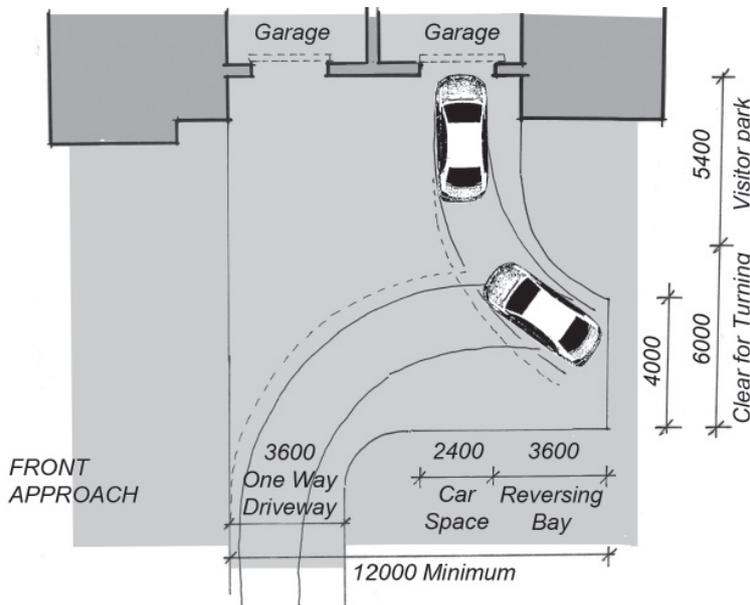
### Car Parking

On group housing sites vehicle circulation is generally designed in accordance with *AS2890.1 Parking Facilities - Off-street car parking*, which usually meets council requirements. It is assumed that only passenger cars enter the site.

Particular issues are ensuring that vehicle movements will be orderly, and visitor car spaces can be clearly identified. Care must be taken to ensure that vehicles do not pass by or park immediately adjacent to neighbouring bedroom and living room windows. Road layout design must also be designed in such a way that arrangements can be included and described in the housing agency’s Management Agreement for each housing unit.



**Figure 15:** Car turning diagram to suit side approach access to house garaging on a group site



**Figure 16:** Car turning diagram to suit front approach with 3.6m driveway access to house garaging on a group site

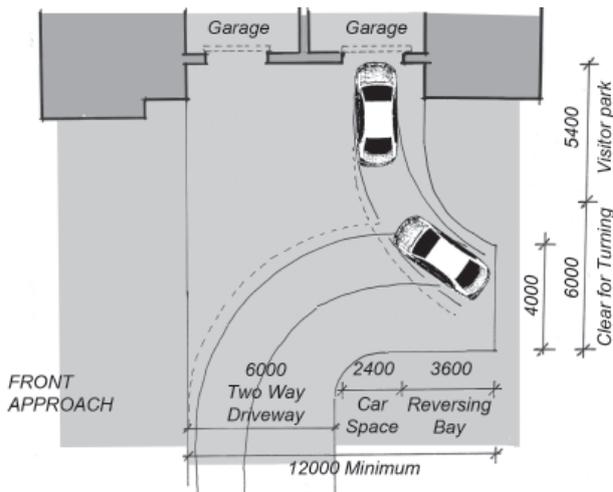
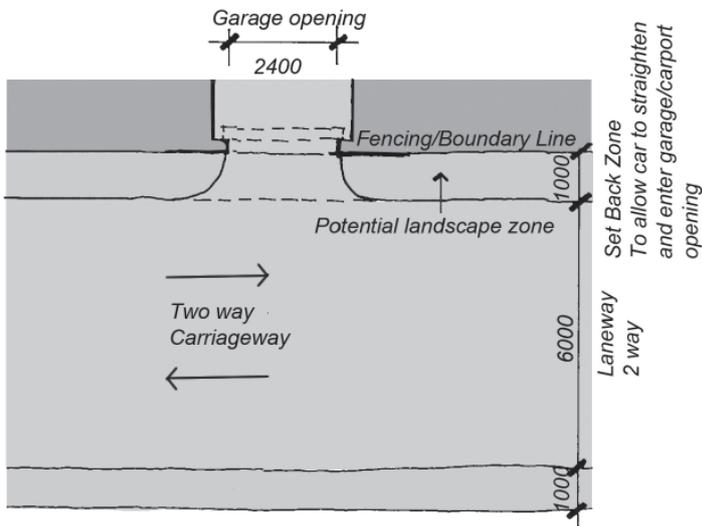
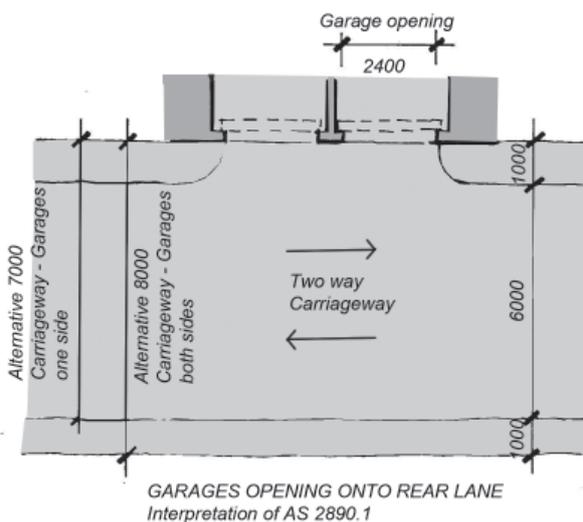


Figure 17: Car turning diagram to suit front approach with 6.0m driveway access to house garaging on a group site



LANEWAY GARAGING  
Options: Wider laneway 8.00m wide garaging both sides  
7.00m wide garaging one side  
Carriageway can remain at 6.00m wide

Figure 18: Car parking for a single garage opening onto a rear laneway



GARAGES OPENING ONTO REAR LANE  
Interpretation of AS 2890.1

Figure 19: Car parking for a double garage opening onto a rear laneway

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

On some larger group housing sites, council controlled garbage collection trucks have entered and driven through. Walkup flat sites are a good example of these practices. On new sites such arrangements are no longer practicable unless there are special agreements. Design issues for entry of garbage trucks onto group sites include engineering standards of road construction and turning arrangements. At Newhaven, developed by the SAHT in 1995, arrangements were negotiated for smaller garbage trucks to traverse the narrow public roads fronting Torrens Title allotments created in this development.

### Resident Parking

- Use attached carports;
- Provide roller door for security (or gates) to bring car within secure area.

### Visitor Parking

- Proximity to dwelling;
- Passive surveillance is crucial.

## Garbage Collection and Bin Storage

### Bin Storage

- Most councils promote the use of wheelie type bins (refer specific councils for detailed requirements);
- Individual storage is usually in carport area behind roller door (out of public view).
- The practice of creating group bin storage on larger sites can be discontinued;
- Bins are generally wheeled off site to a kerbside location for collection.

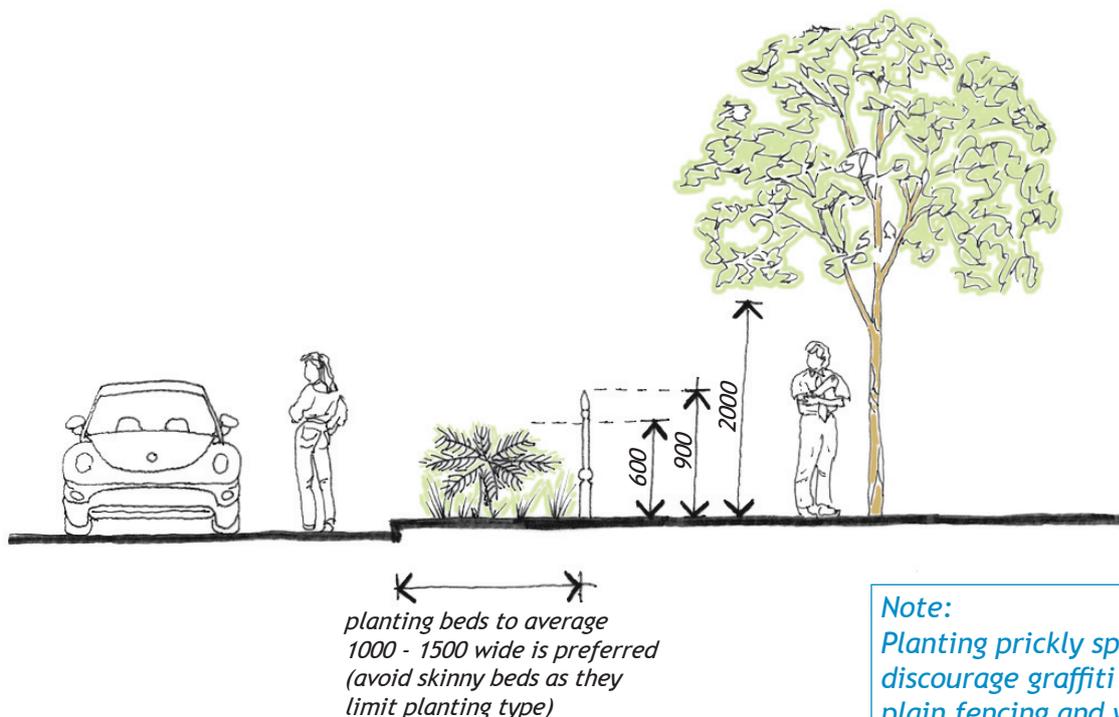
### Renovation

- Remove bin storage areas on renovation as they are:
  - A potential hiding spot;
  - Difficult to light area at night;
  - A maintenance liability;
  - Restrict accessibility.
- Sites designed in accordance with SAHT universal requirements will provide a stepless access route to the street for bins.

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

### Landscaping and Site Lighting

- Site lighting standards apply to all publically accessible areas on group housing sites to ensure safety and security for all users;
- All site lighting is to be designed by a specialist lighting engineer in accordance with AS 1158.3.1 *Lighting for roads and public spaces - Pedestrian Area (Category P) Lighting - Performance and Design Requirements*;
- Category of lighting will depend on the site requirements:
  - Category P4 for small group sites (eg 3 to 5 dwellings where the common street access has high reflective vertical surfaces (eg light coloured fencing enclosing laneways));
  - Category P3 for sites with medium sized public areas; and
  - Category P2 for larger unsecured car parking areas where safety and the risk of crime is higher.
- Lighting to be controlled by a PE cell.
- Due to ongoing maintenance, design to avoid strip landscaping along access roads, however, if required, minimum width to be 1000mm (refer below figure 20).



**Note:**  
Planting prickly species can discourage graffiti attacks on plain fencing and walls facing common areas.

Figure 20: Landscaping requirements

## 2.2 DESIGN GUIDELINES FOR SITE LAYOUTS

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### Fencing

The main role of fencing is to define ownership of space and use of space:

- High fencing - Opaque (solid) for privacy generally 1800mm high;
- Low fencing - Transparent (see through) generally 900mm to 1200mm high;
- Frontages can be defined without the need for fencing using a kerbline or footpath (on a group site).
- Opaque privacy fencing, 1800mm high, must not have posts and rails facing internal common areas or facing street frontages. “Good neighbour” that does not rely on post and rail should be used where appearance is a concern.

