

OPEN SPACE IN MEDIUM-DENSITY HOUSING GUIDELINES FOR PLANNING AND DESIGN

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GLOSSARY

1. **Activity generator:** Feature that tends to create (generate) activity. Can result in positive as well as negative impact. For example, picnics in a local park confer an added safety element to an outdoor space that, in the absence of people, might be less safe. Alternatively, the location of a tavern in a particular area might generate high levels of undesirable activities in what might have been a quiet and safe neighbourhood.
2. **Capable guardian:** People (usually adults) who feel responsible for some space or 'territory' and ownership of it and can intervene to help others who may be in difficulty. Often they are residents who can see public spaces because of natural surveillance opportunities; in other areas, they may be 'regulars', such as street vendors and postal delivery workers who frequent public spaces and are familiar with who is a local person and who is likely to be an intruder.
3. **Concealment spaces:** Spaces usually concealed from view that can be used as places for hiding people who might commit criminal acts.
4. **Continuous path of travel:** A slip-resistant, hard-surfaced and continuous pathway that does not incorporate any step, stairway or other impediment which would prevent it from being safely negotiated by people with disabilities and is provided in accordance with AS 1428.2.
5. ***Crime Prevention through Environmental Design (CPTED):*** CPTED is a crime prevention philosophy based on good design and effective use of the built environment leading to a reduction both in the fear and incidence of crime, as well as an improvement in the quality of life. The use of CPTED is intended to reduce crime and fear by reducing criminal opportunity and fostering positive social interaction among legitimate users of space.
6. **Entrapment spaces** Spaces usually concealed from view that can be used as hiding places or as places for trapping unwary people and for concealing criminal acts.
7. **Green street:** As part of the public realm, a *green street* is a linear corridor in a street reserve that, through a variety of design and operational treatments, gives priority to walking, cycling and greenery. Treatments may include footpath widening, landscaping, traffic calming and other pedestrian-oriented features (such as seating, gardening and some play activities). A green street augments the open space network by connecting residents to it (and other local destinations such as schools) and enhances the overall quality of the public domain.
8. **Heat sink:** The effect of hard urban surfaces increasing the temperature of urban areas. Also known as the 'heat island' effect of cities.
9. **Hotspot:** Location that generates illicit activity. For example, the location of a tavern in a particular area might generate high levels of undesirable activities in what might have been a quiet neighbourhood with little or no nuisance or inappropriate activity.
10. **Legibility:** Legibility is an ease of understanding and ability to navigate through an environment such as open space.
11. **Medium-density housing:** attached dwellings between two and ten storeys (including villas, town houses and apartments). (Council of Mayors SEQ, 2011b)
12. **Movement predictor:** Denotes any lane, path or track, which follows a predictable course and offers no escape or alternative routes. People can easily be trapped on movement predictors if they are no clearly visible escape routes.
13. **Natural ladders:** The unintentional provision of access to yards or buildings, by the building of fences, low walls, or other pre-built structures (such as architectural features) that make it easy to gain illicit access to places normally inaccessible except by a ladder.

14. **Natural surveillance** (sometimes called casual or passive surveillance): Facilitating the opportunity for incidental observation of a street, front of house, a park, or other space that can be observed while a person is engaged in other activities. For example, watching the street from the kitchen window while washing the dishes, when preparing a meal or keeping an eye on strangers and potential intruders while watering the grass.
15. **On-site open space**: Private and shared open space provided within a housing development.
16. **Park**: Premises used by the public generally for free recreation and enjoyment and may be used for community events. Facilities may include children's playground equipment, informal sports fields and ancillary vehicle parking and other (Queensland Planning Provisions Definition - Queensland Government, 2011a).
17. **Plazas and commons**: Include town squares, building forecourts and 'in-between' public open spaces in the public realm. They can include publicly available green roofs. These spaces act as neighbourhood meeting places and places for civic events. They can be paved and/or landscaped.
18. **Private open space**: An outdoor space for the exclusive use of occupants of a building. Includes balconies, yards, verandahs, terraces, courtyards.
19. **Public open space**: Outdoor spaces that are generally accessible to the community and provide for a range of sport, recreation, cultural, entertainment or leisure pursuits (Queensland Planning Provisions Definition - Queensland Government, 2011a).
20. **Shared open space**: Shared (or common) space bounded by the group of dwellings it serves, accessible only to residents.
21. **Situational Crime Prevention**: Discrete managerial and environmental change to reduce opportunity for crimes to occur. Focused on the settings for crime, rather than upon those committing criminal acts. Seeks to forestall the occurrence of crime, rather than to detect and sanction offenders. It seeks not to eliminate criminal or delinquent tendencies but to make criminal action less attractive to offenders.
22. **Universal Design**: The design of buildings and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design. The key principles of urban design include (but are not limited to): equitable use, flexibility, simple and intuitive, information for usage, minimises risk, efficiency and comfort and appropriate size and space. (Centre for Universal Design, 1997)
23. **Water-sensitive urban design**: A planning and design approach that integrates water cycle management into the built form of houses, allotments, streets, suburbs and master planned communities. (Queensland Government, 2009)
24. **Woonerf**: Dutch term for a 'living street' where pedestrians have priority over cars and the street can be used as a public space by people for playing, cycling, socialising or other activities. Also called 'homezones' in the United Kingdom.

ABBREVIATIONS AND ACRONYMS

AHURI	Australian Housing and Urban Research Institute
CALD	Culturally and Linguistically Diverse
CMHC	Canada Mortgage and Housing Corporation
CBD	Central business district
CPTED	Crime Prevention through Environmental Design
EDRA	Environmental Design Research Association
PIP	Priority Infrastructure Plan
SEQ	South East Queensland
SPA	Sustainable Planning Act
UDAS	Urban Design Advisory Service, New South Wales Government
ULDA	Urban Land Development Authority

PART 1: OVERVIEW

1.0 Introduction

Public open space plays a variety of roles in promoting sustainable living in medium-density housing areas by facilitating social interaction, promoting physical and mental health, enhancing the attractiveness of the urban environment, aiding cooling of urban areas and supporting natural systems. Open space can also support social encounters and community activity that help bring people together fostering friendships, developing social networks and enhancing quality of life.

1.1 Forms of Open Space in Medium-density Housing Areas

In a medium-density area, open space is provided as both public and on-site (private and shared) open space, with each playing a specific role (as explained in

Table). Each of these forms of open space fulfils a different role, one complementing the other. For example, on-site private open space allows residents to extend their indoor environment into the outdoors (onto balconies or courtyards), while shared on-site open space supports neighbourly interaction and more diverse outdoor activity within the home environment (than is possible in private on-site open space), without having to journey away from the home. Public open space supports a diversity of away-from-home outdoor activities such as walking, fitness and participation in the social and cultural life of the neighbourhood. Public open space has traditionally been provided as public parks (across a hierarchy of different types. See Table 1).

With increased urban density and the challenge of providing traditional parks where available land is limited, a new form of public open space, described as *plazas and commons*, has emerged, making novel use of small urban spaces 'between', 'beside' and 'above' buildings (such as plazas, commons and rooftop gardens).

Form	Description	Role
ON-SITE OPEN SPACE		
Private	The gardens, yards, balconies, terraces, verandahs, courtyards and other spaces associated only with a specific private dwelling.	<ul style="list-style-type: none"> • Supports outdoor living as an extension of the dwelling. • Supports healthy outdoor activity (e.g., play and gardening). • Facilitates ventilation and cooling.
Shared	<p>Shared space bounded by the group of dwellings it serves, perceived as the 'territory' of those dwellings exclusively and accessible only to those dwellings.</p> <p>Note: it serves a different function from indoor community facilities (e.g., theatres, gymnasias and dining rooms).</p>	<ul style="list-style-type: none"> • Venue for neighbourly interaction, complementary to but distinct from the public life of parks, plazas and commons. • Supports social inclusion for people with limited mobility (e.g., because of age, culture or physical ability). • Supports healthy outdoor activity within the home environment through children's play, gardening and other activities. • Supports changing household life-cycle needs, particularly for families with children and older people. • Facilitates ventilation and cooling (using greenery and air flow). • Supports unforced social encounters close to home.
PUBLIC OPEN SPACE		
Park	Dedicated outdoor recreation spaces for use by the public for a diversity of social, cultural and recreational activities, as well as ecological functions (e.g., water systems management, bio-diversity, urban cooling). Greenspace provides access to Nature, essential to human health.	<ul style="list-style-type: none"> • As part of an open space network, supports diversity of opportunity and facilities for outdoor recreation, play, sport and fitness, socialising, entertainment, quiet retreat, access to Nature and provision for pets. • Promotes a sense of community identity and social inclusion and enhances visual amenity. • Includes soft landscaping (greenspace) to support shade and other greenery for diversity, health, food production and ecological functions. • May include temporary commercial functions (e.g., outdoor café or farmers' markets). • Provides critical ecological functions of bio-diversity, urban temperature cooling and 'breathing', water management.

Form	Description	Role
Plazas and Urban Commons	Smaller spaces in the public realm (e.g., town squares, building forecourts, green roofs) that are predominantly pedestrian spaces used for socialising, sitting and civic activities.	<ul style="list-style-type: none"> • Promotes a sense of community identity and social inclusion. • May include permanent or temporary commercial activities (e.g., outdoor café or farmers' markets). • May form part of an open space network, supports diversity of opportunity and facilities for play, socialising, relaxing, entertainment and civic events.

Table 1: Forms of open space in medium-density housing areas

GUIDELINES FOR ON-SITE OPEN SPACE IN MEDIUM-DENSITY HOUSING

These guidelines address planning and design considerations for the following matters for on-site open space in medium-density housing:

1. General elements of on-site open space
2. The needs of specific users
3. Specific considerations for private open space
4. Specific considerations for shared open space

Please refer to the References for a full list of sources. ¹

1.0 General Elements of On-Site Open Space

This section addresses the general qualities and principles applicable to on-site open space in medium-density housing, including private and shared open space. These 'front-end' design matters should be considered at the beginning of the planning and design process.

¹ Material has been drawn from the following references: Carr *et al.*, 1992; Centre for Subtropical Design, 2012; Cooper Marcus, 1995, 2003a, 2003b, 2006, 2008 and 2010; Cooper Marcus *et al.*, 1986, 1998, 2008; Findlay, 2009; Forsyth, 2003; Forsythe *et al.*, 1994 and 2005; Francis *et al.*, 1991 and 1992; Hutchinson, 1994; Kaplan, 1985, 1992, 1995 and 2001; Kaplin *et al.*, 1989 and 1990; Lancaster, 2007; Maller *et al.*, 2002, 2006 and 2009; Owens, 1994; Owens *et al.*, 2009; New Zealand Ministry of Justice, 2005; Planning NSW, 1998; Sarkissian, 2003; Sarkissian *et al.*, 1986, 198, 1991, 2000 and 2004; Saville, 2007; Social Planning Consortium, 1985; Townsend *et al.*, 2008, Tract Consultants *et al.*, 1990; White, 2001 and 2007; Whitzman, 2008; and Wulff, 2005.



Figure 2: On-site shared open space serving medium-density housing

Image: Brendan Hurley

Relevant design elements illustrated in Figure 2 include:

- **A central shared open space that relates visually and physically to the dwellings**
- **Clear territoriality of on-site open space and definition of intended use of space (e.g., gates and symbolic features define private and shared space)**
- **Ease of site legibility and wayfinding**
- **Multiple shared open spaces, including a rooftop space, catering to a diversity of activities (including potential for hard paved areas be used for play)**
- **Natural surveillance over shared open space and pathways**
- **Shared open space supports cooling and ventilation of buildings and the site, as well as offering visual access to greenery from dwellings**
- **Vehicular space tamed and shared for use by pedestrians**

1.1 Qualities of On-Site Open Space

The following qualities of on-site open space can enhance residential satisfaction in medium-density housing:

- Access to Nature (greenery) in as many locations as possible
- Design that makes sense by permitting easy orientation
- Design for ease of management and maintenance
- Design that aims to encourage maximum use and enjoyment while not unduly impinging on the privacy or territory of any individual or group
- A variety of types of spaces, potential uses (active and passive) and locations to meet a diversity of resident needs, including children and older people
- Ability to be adapted to meet the needs of a changing resident population over time
- Climate-responsive design that supports site and building cooling and ventilation
- Opportunities for personalisation and territorial expression
- Encouragement of social interaction and participation in activities
- Support for individual privacy
- Clear definition of proposed uses of each space
- Universal design principles to achieve barrier-free environments and be accessible to all people
- A safe environment
- Consideration of microclimate: heat, cold, sun, glare, shade and wind

1.2 Basic Principles of Providing On-Site Open Space

The following basic principles can be used in the planning and design of all on-site open space.

A. LEGIBILITY AND WAYFINDING

Legibility refers to the ease of understanding and ability to navigate through an environment. Strategies to ensure legibility and wayfinding in on-site open space should aim to:

- Provide visual cues such as landmarks, landscaping, motifs and thematic spaces, signage
- Ensure that signage is visible, concise and easily maintained (in the case of directional signage, to be identifiable from 20m)
- Include tactile cues such as handrails, wall and path texture changes
- Provide orientation and wayfinding markers around the site
- Define and differentiating spaces by using signage, landscaping, themes and motifs and landmarks
- Provide at least one main hard-surfaced pathway connecting most dwellings with major on and off site facilities
- Plan predictable path directions



Figure 3: A simple legible layout where entry to a group of dwellings is facilitated by a path with clear signage and direction

Photo: Wendy Sarkissian

B. TERRITORIALITY AND ACCESS FOR NON-RESIDENTS

Territoriality is a concept that relates mostly to people's feelings of ownership and responsibility for private or shared open space. People usually protect territory that they feel is their own; they are likely to have a certain respect for the territory of others. Cues can be provided to create and support a sense of ownership. Strategies to define territoriality should aim to:

- **Consider the natural grouping of dwellings and their open space in relationship to topography**
- **Utilise physical measures such as paving, art and signs to express ownership**
- **Use physical barriers (e.g., fences) and symbolic barriers (e.g., vegetation) to reduce ambiguity and excuses for inappropriate behaviour**
- **Use natural and built landmarks and other 'cues' such as colour and decorative planting to give identity to different parts of the site**
- **Ensure that the whole design communicates the clarity of purpose of any space**



Figure 4: Territory and fencing:- this fence was added after residents moved in to overcome territorial ambiguity

Photo: Wendy Sarkissian

Strategies to clearly delineate access for non-residents should aim to:

- **Ensure that there is clarity of entry and exits into the site**
- **Provide a clear sign at the site entry, at a scale suitable to the surrounding neighbourhood and ensure it is lit at night**
- **Design a site plan and circulation pattern that is easy to identify, remember and explain to visitors and emergency services**
- **Use clear entries, carriageways and dwelling addresses to support easy wayfinding**
- **Provide a clear road and pathway hierarchy that makes it easy to distinguish which parts of the site are private**
- **If non-residents are likely to short-cut through the site, either discourage this by placing a barrier, or channel it by providing at least one legitimate shortcut that does not violate resident territory**

C. PEDESTRIAN ACCESS AND SAFETY, VEHICULAR ACCESS AND TRAFFIC MANAGEMENT

Site planning for vehicle access and traffic management should ensure safe access by all pedestrians, especially children and older people who will also be part of the resident population. Strategies should aim to:

- **Use traffic-calming measures (including landscaping, lighting, paving changes) that require cars to travel at low speeds and create a feeling of a pedestrian precinct**
- **Limit the length of straight stretches of roadway**
- **Limit speed by humps, sharp bends, narrowed roadway**
- **Design lighting so speed-reducing features are clearly visible at night (poles 3.5m high, spaced 25m apart)**
- **Ensure that the road design appears different from surrounding residential streets**
- **Avoid doors opening onto driveways**
- **Separate path access to parks and play areas**

- Separate play equipment areas from traffic using bollards, fences or chains, while not creating the impression that children should be separated from the rest of the street
- Design the site so that each housing cluster is located to facilitate easy pedestrian access and visual focus
- Ensure drop-off, pick-up and waiting areas are easily accessible and located near and connected to clusters of dwellings by pathways
- Provide clear signage to direct vehicles around the site
- Avoid entries near bends or hills
- Ensure parking does not dominate the site or disadvantage pedestrians.

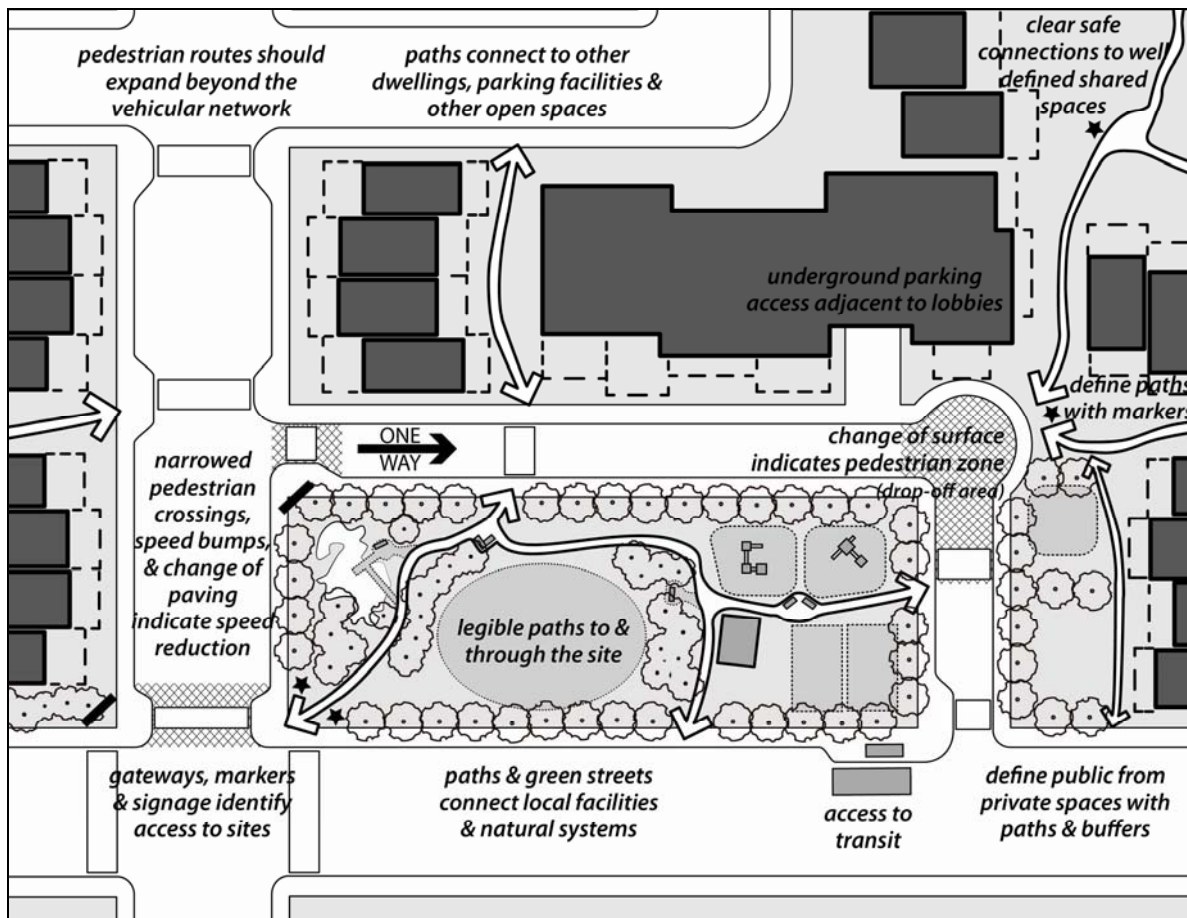


Figure 5: Pedestrian access and traffic management

Image: Brendan Hurley

D. LANDSCAPING APPROPRIATE TO PREDICTED ACTIVITIES

Both on-site open space and pathways should be designed appropriate to the needs of residents. Landscaping should take into account the probable use of spaces, such as:

- Providing a variety of spaces for different purposes
- Providing a variety of seating options
- Considering heat, cold, sun, glare, shade and wind
- Providing adaptability for a changing resident population and their needs
- Accommodating children's play where possible
- Providing opportunities for privacy
- Avoiding large empty paved areas

The pathway and access system should be designed to:

- Accommodate predictable patterns of use in terms of surfacing and location, including from dwellings to both on-site and off-site amenities and between dwellings
- Make provision for strolling and leisure walking
- Relate the width of paths to the volume of traffic
- Locate pathways and access ways so as not to violate the privacy of nearby dwellings
- Ideally, locate pathways at least 4m from dwellings to protect privacy or shield dwellings from paths by fencing, planting or gradient changes
- Buffer views into private open space from upper-level pathways in multi-level developments

E. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

CPTED is a crime prevention philosophy based on good design and effective use of the built environment leading to a reduction both in the fear and incidence of crime, as well as an improvement in the quality of life. The use of CPTED is intended to reduce crime and fear by reducing criminal opportunity and fostering positive social interaction among legitimate users of space. Crime prevention strategies should also focus on social and other motivational and guardianship factors that contribute to safety (referred to as Second Generation CPTED).

Community safety concerns should influence the site design. These include keeping pedestrians safe from cars (see sub-section C. Pedestrian access and Safety, vehicular access and traffic management above) and safe children's play (see Section 2.1 below), as well as through CPTED strategies.

The design of housing and associated open space is a critical component of a CPTED strategy. Figure 6 below shows some of the components of CPTED which apply to open space.

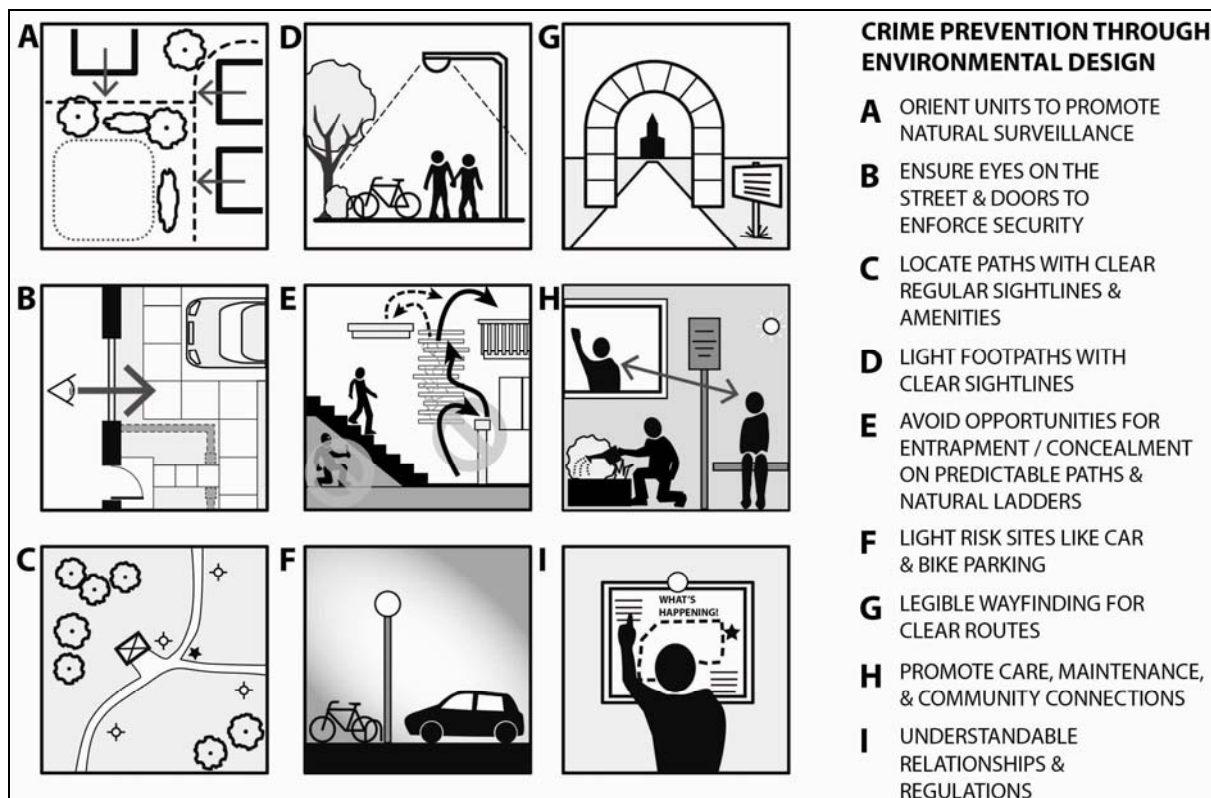


Figure 6: CPTED principles applicable to on-site open space

Image: Brendan Hurley

Strategies that can be used in planning and designing on-site open space:

- Employ real or symbolic barriers to help discourage intrusion by strangers into communal landscaped spaces intended for use by residents only
- Treat the external boundaries with care to allow permeability without having outsiders intruding into private or shared residential territories
- Eliminate opportunities for casual short-cutting through the site via strategic location of fences or low planting, especially at site entry points. Low fences and walls can define the perimeter and serve to channel pedestrian movement
- Where an existing street or established pedestrian route passes through a new residential site, ensure that it passes through relatively 'neutral' portions of the site, buffered (by planting, level changes, mounding or other means) from shared parts of the site



Figure 7: Use landscaping to buffer and delineate shared and private open spaces

Photo: Wendy Sarkissian

- **Clearly delineate the hierarchy of public open space, shared and private open space via fencing, landscaped buffers, level and material changes or use of open space as a buffer**
- **Divide large residential sites into visually identifiable and assignable 'clusters', using appropriate fencing, planting and building placement so that open spaces become the legitimised 'territories' of specific groups of dwellings**
- **Provide at least a visual buffer between shared and private spaces**
- **Use gates and fences to control side and rear access**
- **Ensure that there is clarity of entry and exits into the site**
- **Avoid ambiguous land use and make sure that the whole design communicates the clarity of purpose of any space.**
- **Aim to achieve centralisation of night-time activities to enable supervision**
- **Eliminate predictable routes and potential entrapment and concealment locations from the design wherever possible**
- **Particularly in high-crime areas, design paths through a residential development to allow pre-scanning by the user before use**
- **Orient buildings to overlook shared open space**
- **Select plants that support crime-prevention initiatives, including in high-crime areas considering planting heavy or extra heavy standard or even semi-mature trees and carefully specifying the location and type of planting (e.g., use of thorny shrubs)**

- Consider social crime prevention strategies: community engagement, community capacity building and neighbourhood social events to strengthen community development (consistent with Second Generation CPTED approaches)

Further information on CPTED is in the key references: *Crime Prevention through Environmental Design, Guidelines for Queensland*, Queensland Government, 2007a and b; and *National Guidelines for Crime Prevention through Environmental Design in New Zealand*, New Zealand, Ministry of Justice 2005.

F. CLIMATE-RESPONSIVE DESIGN

The design of open space can greatly improve the liveability of both the buildings and the open spaces in medium-density housing in relation to climate control (see

Figure 8:).

- Ensure that on-site open space supports cooling of the site and contributes to enhancing the energy efficiency of dwellings
- Locate, orient and landscape open space to support winter sun penetration and summer cooling to both open space and the buildings
- Minimise use of hard surfaces
- Provide a northerly aspect for living areas, courtyards and balconies to permit summer sun to enter dwellings
- Orient for maximum ventilation
- Provide artificial shade structures in shared open space to allow outdoor living during hot seasons and protect from summer storms

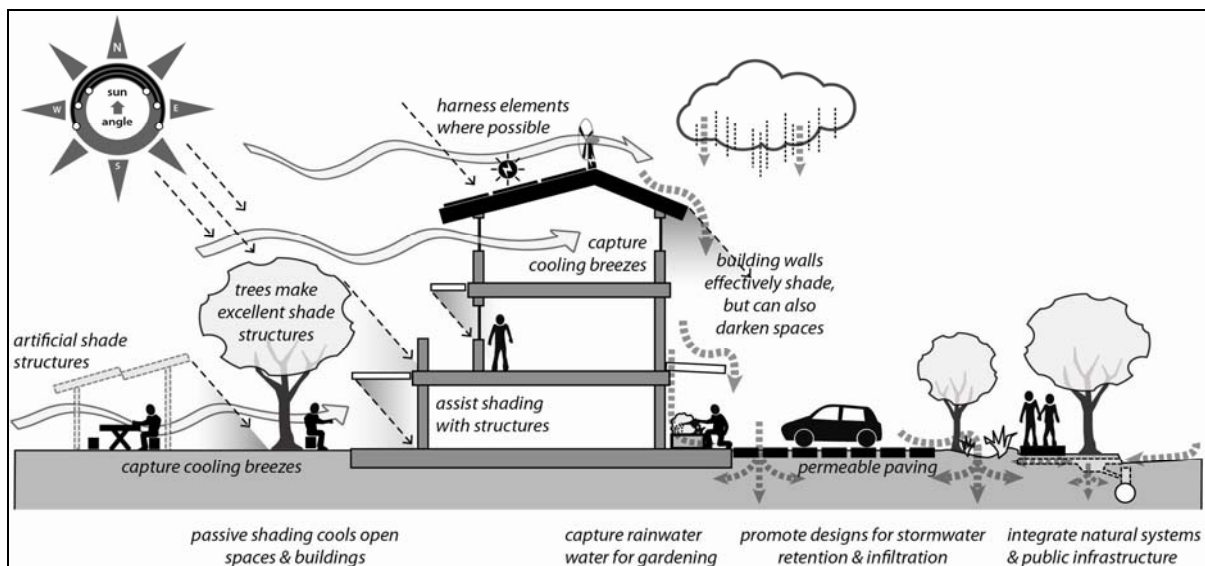


Figure 8: Climate-responsive design

Image: Brendan Hurley

2.0 The Needs of Specific User Groups

If the site is designed to support the needs of young children, older residents and people with disability, it will be almost certainly be comfortable and accessible to other groups. It is important to provide for flexibility as household composition changes. Some specific needs of different resident groups are detailed below. These needs can apply to all on-site open space, but are of particular concern in on-site shared open space.

2.1 Children's needs: general issues

Basic considerations for children's use of shared open space

- 1. The importance of play: make provision for a variety of play experiences which will enable children to develop their full potential**
- 2. Child density: children are not respecters of the private garden and privacy is an acquired taste. The physical design must accommodate the normal behaviour of sociability, experimentation, whooping it up with friends and exploration**
- 3. Planning shared open space: when housing is provided in densities above 20 to 25 dwellings per hectare, shared open space planning becomes crucial and must function well for children and adults alike**
- 4. Adult caregivers' roles: It is necessary to provide an environment that is safe, easy to supervise, conducive to making friends and which elicits creative behaviour on the part of the child, supporting good parenting and care giving and the rights of the child**
- 5. Existing neighbourhood facilities: on-site play facilities should augment and complement existing neighbourhood facilities, not duplicate them**
- 6. Climate and topography should be accommodated and taken advantage of in the design of play opportunities**
- 7. Hierarchy of play spaces: children's play is a process of integration into the adult world the radius of a child's activities expands as self-reliance develops. Careful site planning and design can support this development**

In designing medium-density residential environments for children, we must be cognisant of the discrete and well-known needs of children of different ages and to balance safety and their on-site recreation needs for those in all the stages of childhood, including small children (toddlers and pre-schoolers) who require closer supervision and more enclosed play spaces and older (school-aged) children who are more on the move.

Design spaces so that they:

- Provide for a variety of play experiences to enable children to develop their full potential**
- Create a hierarchy of play spaces through which the radius of a child's activities expands as self-reliance develops**
- Accommodate childhood behaviours of social play, solitary play, experimentation, noise and exploration**
- Provide a shared play area ideally at a minimum of 150m², conveniently located but separated sufficiently from dwellings to avoid a noise nuisance**
- Connect a series of larger paved spaces for children to play 'street' and court games**
- Include hard-surfaced areas for tricycles, carts and other wheeled vehicles used by small children, including wide pathways and small areas off the circulation route**
- For older children, ensure paths are wide enough for bicycles, follow an interesting circuit, do not have low-branching vegetation adjacent and are well lit for evening use**

- Locate paths to and from dwellings and from parks, schools and favourite children's places, providing safe play opportunities along the way
- Provide an environment that is safe, easy to supervise and conducive to making friends for adult caregivers
- Ensure on-site play facilities augment and complement existing neighbourhood facilities, rather than duplicate them
- Accommodate and take advantage of climate and topography in the design of play opportunities (e.g., playground shade structures)
- Avoid large, flat wide and minimally landscaped spaces and provide a variety of spaces, surfaces (including at least a small area of grass), levels, contours (e.g., mounds) and plant materials
- Provide as much of the site as possible for unrestricted and unregulated play
- Avoid 'keep-off' landscaping (such as thorns) in areas which could be used for play
- Provide adequate and appropriate equipment for all ages and for both boys and girls so that one group does not dominate or damage recreation equipment intended for other user groups
- Provide identifiable meeting places for each age group
- Select children's play equipment that is constructed from sturdy, durable, vandal-resistant materials that can be easily repaired if damaged
- Provide safe, enclosed play areas within sight and calling distance of dwellings for pre-schoolers
- Encourage natural surveillance of older children's play areas by locating them close to where children live (100 to 400m)
- Ensure that the shared space or territory of a group of dwellings provides a safe and easily surveyed play space, especially for smaller children

Children's Spaces

Children enjoy landscaped spaces of all sizes and dimensions but prefer more secluded landscaped areas that create sense of privacy to accommodate their needs for independence and autonomy. Where only small shared spaces are provided, ensure that they are sufficiently separate from dwellings to avoid intrusion:

- Provide a variety of spaces, surfaces, levels and plant materials
- Avoid large, flat wide and minimally landscaped spaces
- In larger sites, provide mounding for views and rolling down slopes (*IMAGE: Sphere photo*)
- Even in small areas of shared open space, try to provide at least a small area of grass
- Ensure that the needs of people with disability are met and do not conflict with these requirements

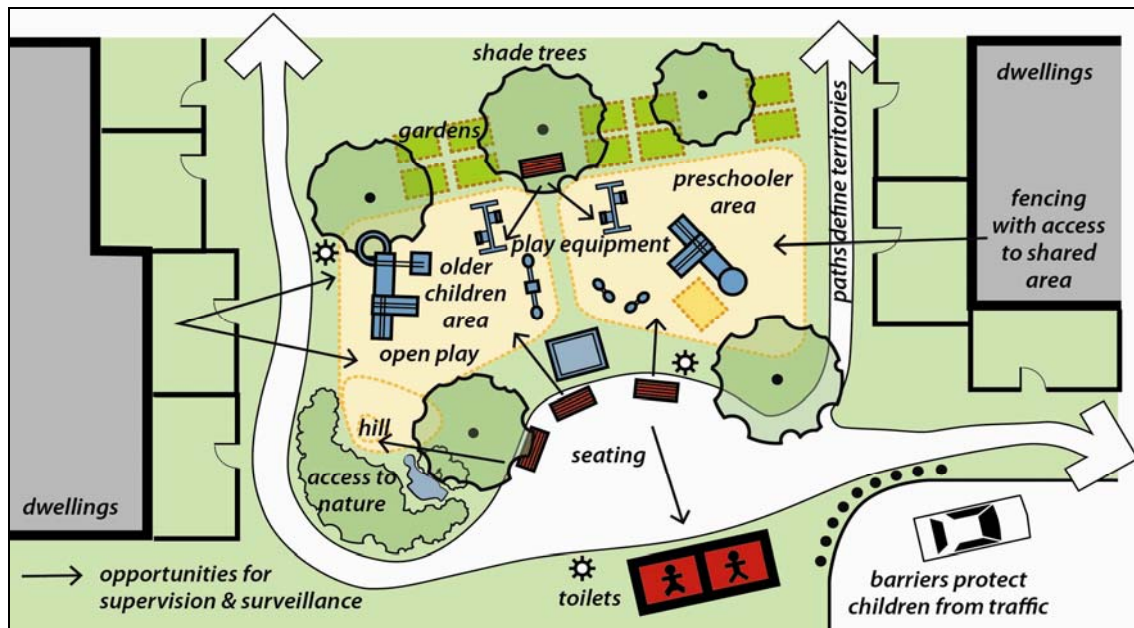


Figure 9: Children's play in shared open space

Image: Brendan Hurley



Figure 10: This grassed area could have been designed specifically for children's play

Photo: Wendy Sarkissian

2.2 Children: specific issues

It is important to maintain a focus on young children (where they are resident on-site) as residents who need particular opportunities for use and enjoyment of on-site open spaces.

Group Territory

Ensure that the shared space or territory of a group of dwellings provides a safe and easily surveyed play space, especially for smaller children.

- Specify that each shared open space is clearly the territory of a specific group of dwellings
- Ensure that access to shared open space is either directly from the dwelling or via ground-level private open space
- Design shared open spaces which are roughly square or rectangular to enable supervision of children at play
- Group dwellings in relationship to the topography
- Provide a clear road hierarchy which makes it easy to distinguish which parts of the site are private
- Design a site plan and circulation pattern that is easy to identify, remember and explain to visitors
- Use clear dwelling addresses within a conventional system of streets, entries and dwellings
- Use natural and built landmarks and other 'cues' such as colour and decorative planting to give identity to different parts of the site
- Provide a clear sign at the site entry, at a scale suitable to the surrounding neighbourhood *and* ensure it is lit at night

Child Safety in On-site Outdoor Areas

The key issue in designing residential environments for children and teenagers is to find a balance between safety and their on-site recreation needs for those in all the stages of childhood.

- Ensure that doors do not open onto driveways.
- Encourage natural surveillance of children's play areas by locating them close to where children live (100-400 m).
- Limit vehicle speed to a walking pace of 12 to 20 kph by humps, sharp bends, or narrow sections of roadway no more than 50 m apart.
- Avoid long sightlines that might encourage higher speeds.
- Separate play equipment areas from traffic by bollards, fences or chains, while not creating the impression that children should be separated from the rest of the street.
- Design lighting so speed-reducing features are clearly visible at night (poles 3.5 m high, spaced 25 m apart).
- In cluster housing configurations, try to ensure each dwelling has visual and functional access to a street on one side and a pedestrian-oriented court on the other.
- Provide play spaces and footpaths in shared open space.
- Consider the concept of a 'play street', especially in areas with low levels of car ownership.
- Consider widening one verge to a road to allow for group play on neutral territory within a very short distance of the dwelling. It is essential to maintain good sight lines and add some form of barrier to prevent children running inadvertently onto the road.

Supervised Playing Close to Home

- Provide enclosed areas such as a front porch for toddlers' 'doorstep play'
- Consider providing a storage cupboard for tricycles and prams at the dwelling entry.
- Enclose backyards with fences and gates to enable independent play without the presence of an adult and to keep in dogs.

Small children

Ensure that small children can be contained in a yard and observed from dwellings work areas.

- Visible from kitchen or study/office
- Sunny back yards
- Yard of reasonable shape to accommodate at least some play equipment.
- Clearly defined areas (with fencing, buffers, etc.) so that children do not intrude where their play is inappropriate

Large Grassed Areas for Play

Although paved areas seem preferred by children for most activities, open grass areas provide for softer running and tumbling surface for soccer, play-fights, tag, kite flying, and so on.

- For a variety of ball games, provide an area 250 m² clear of planting and relatively flat but well drained; 150 m² would be a minimum, with a 10 m buffer between outdoor private spaces and ball playing areas

Network of Play

- ◆ Provide paths to and from dwellings and from parks, schools and favourite children's places, providing safe play opportunities along the way
- ◆ Connect a series of larger paved spaces for children to play 'street' and court games: skipping, ball, hopscotch, basketball, wall tennis, go-carting and bicycling
- ◆ Provide an area of 150 m², conveniently located but separated sufficiently from dwellings to avoid a noise nuisance

Hard-Surface Play

While all children love to play on grass, there is no substitute for hard-surfaced areas for tricycles, carts and other wheeled vehicles used by small children:

- Provide a variety of hard-surfaced areas, including wide pathways and small areas off the circulation route
- Use dark paving in some areas for hopscotch

2.3 Specific guidelines for children's play in shared open space

Conflicting uses

- ◆ Ensure that potentially conflicting activities are not placed next to each other

Supervising adults

- ◆ Provide seating areas with good sightlines to children's play areas for adults supervising children's play

Children's preferences

- ◆ Select play equipment to meet the developmental needs of children and not exclusively for the maintenance needs of the managing authority

Maintenance of recreation equipment

- ◆ Inspect and repair recreation equipment regularly

- ◆ Ensure that planting will not be damaged around areas that teenagers may take over by allowing plenty of standing, sitting and sprawling spaces on horizontal surfaces and low walls around benches and rubbish bins

Sturdy materials

- ◆ Select children's play equipment that is constructed from sturdy, durable, vandal-resistant materials that can be easily repaired if damaged

Pre-schoolers

Provide on-site opportunities to provide facilities for small children:

- Safe, enclosed play areas within sight and calling distance of dwellings
- Safe route from dwellings
- Shaded seating for supervising adults
- Sheltered and sunny
- Scaled-down equipment

Children on the Move

As moving around the neighbourhood is children's most frequent outdoor activity, particularly after the age of four, design the outdoor areas to accommodate this movement.

- Provide paths at least 2.4 m wide which: follow an interesting circuit; are rounded at corners; do not have low-branching vegetation adjacent; do not invite cutting through play areas or across lawns; are well lit for evening use
- locate mounds in safe locations for bicycle jumping
- ensure paths have moderate level changes and rest places;
- ensure that paths do not create conflicts between children's play and the needs of older people or people with disability

Unrestricted Setting

Especially in larger sites, create an environment that channels children's play without the need for excessive rules and regulations, as vehemently enforced regulations often force children to place themselves at risk by playing in car parks or roadways.

- Ensure that as much of the site as possible is available for play
- Avoid creating spaces, which are exclusively the domain of one group, thereby requiring regulations
- Avoid 'keep off' landscaping (thorns, etc.) in areas which could be used for play
- Avoid areas that are fenced for no apparent purpose

Large Grassed Areas for Play

Although paved areas seem preferred by children for most activities, open grass areas provide for softer running and tumbling surface for soccer, play-fights, tag, kite flying and so on.

- For a variety of ball games provide an area 250 m² clear of planting and relatively flat but well drained; 150 m² would be a minimum, with a 10 m buffer between outdoor private spaces and ball playing areas
- Ensure that younger children are not bullied or 'run over' by the activities of older children and provide identifiable meeting places for each age group

Safe Pedestrian Access for Children

Provide easy pedestrian and cycle access provided to off-site recreation areas and schools

- On-site paths to accommodate predictable usage patterns
- Paths leading directly to safe crossing en route
- Paths buffered to protect neighbouring dwellings
- Separate from vehicular routes

Equal recreation opportunities

Ensure that adequate and appropriate equipment is provided for all ages and for both boys and girls so that one group does not dominate or damage recreation equipment intended for other user groups

Outdoor Storage

Provide for outdoor storage for the items that residents will need to use in their shared open space:

- separate garden shed
- storage for: barbecue, seating, gas cylinders, umbrellas, loose children's play materials and equipment, watering devices, any sporting equipment such as nets, balls and bats

Locate children's play areas so that they are visible from adjoining properties

Use access-control measures, such as low, optically permeable fencing, to deter illegitimate users from children's play areas

2.4 Needs of teenagers and older children in shared open space

It is essential to provide opportunities for teenagers and older children to 'hang out' in places where their activities do not cause difficulties for others using shared open space or to neighbouring residents. Where a number of play areas are provided, some should appeal to young and some to older children. They should not, however, be so specialised that they appeal to only one age group. If appropriate recreation spaces are not provided for teenagers, they may damage play structures and dominate areas designed for younger children.

- Design places where teenagers can call their own and socialise among their own peers without adult interference. These places can be also spaces used at certain scheduled times
- Ensure that planting will not be damaged around areas that teenagers may use by allowing plenty of standing, sitting and sprawling spaces on horizontal surfaces and low walls around benches and litter bins
- Install unbreakable lighting fixtures near places that teenagers may use
- Involve teenagers in the process of designing and constructing recreation areas for their use to maximise ownership and care of facilities
- Locate a litter bin nearby

- Locate benches against a retaining or free-standing wall so that teenagers can choose to sit on the wall as well as on the benches
- Locate paths so that they do not pass through areas dominated by teenagers
- Locate windowless walls adjacent to hard-surfaced and other recreation areas
- Make sure all areas likely to be used by teenagers are well buffered from nearby dwellings
- Provide places for activities requiring skill and places to work out physically
- Provide places where teenagers can call their own and socialise among their own peers without adult interference. These places can be also spaces used at certain scheduled times
- Provide privacy planting and fencing
- Provide separate areas for teenagers' recreation from parking areas
- Use crime risk assessment procedures to locate these spaces where they will be convenient for local teenagers and not cause dangers to others using the space
- Where feasible, involve teenagers in the process of designing and constructing recreation areas for their use to maximise ownership and care of facilities
- Other considerations:
 - Windowless walls adjacent to hard-surfaced and other recreation areas
 - Privacy planting and fencing
 - Paths that do not pass through areas dominated by teenagers
 - Areas for teen recreation separated from parking areas

2.5 needs of older residents

As older residents spend a great deal of their time in and around their dwellings, the quality of private open space is a major contributor to resident satisfaction. Design spaces so that they:

- Consider providing more generous private outdoor spaces to accommodate a range of predictable uses of older people, including gardening, laundry, airing
- Plan front yards in medium-density housing that allow for maximum communication
- Use 'cut-out' fencing which allows for a range from complete privacy if filled in or planted, to natural surveillance and views out of activity beyond the fence
- Foster 'predictability' of a space (e.g., through landscaping, signage, fencing, changes in colour and texture or other visual and/or tactile cues) to reduce confusion and conflicts over appropriate uses
- As older people often have reduced visual acuity, provide visual complexity and detailing of landscaping and opportunities for close proximity viewing
- Provide raised flower beds and gardens to facilitate viewing and gardening without stooping (plant material height: approximately 635mm to 890mm enables people in wheelchairs or those unable to bend or stoop to touch and smell flowers)
- Accommodate flowering plants and trees that provide diversity throughout the year and indigenous plants that encourage native birdlife and beneficial insects and animals
- Ensure that landscaping materials are contained off paths to avoid slipperiness
- Ensure children's play areas are located so that residents can watch without having their privacy invaded
- Incorporate creative design of the space around communal mailboxes to encourage social interaction
- Avoid isolated outdoor spaces with no connection to other spaces and activity
- Ensure open space is adaptable to ageing in place
- Promote community integration rather than segregation by age or household types
- Locate seating close to main circulation routes to promote rest points and socialising
- Provide opportunities for contact with visual/aural pleasures of the natural world

- Provide opportunities for personalisation and territorial expression
- Reinforce a sense of security and freedom from intrusion and outsiders



Figure 11: Cut-out fencing balances privacy and surveillance

Photo: Wendy Sarkissian

2.6 People with disability

People with disability may be highly dependent on their immediate home environment and may have limited territorial mobility. Balconies provide important opportunities for less physically able people to enjoy the outdoors and watch activity from a comfortable and secure place readily accessible from the dwelling. Strategies to increase satisfaction with on-site open space by people with disability encompass principles of Universal Design include:

- Ensuring dimensions and shapes of balconies are sufficient to allow use by people in wheelchairs (see Section 3.4)
- Ensuring that paths do not create conflicts between children's play and needs of older people or people with disability
- Ensuring a footpath within the site is wide enough for play and socialising
- Ensuring that major on-site pedestrian access routes do not involve a slope of greater than 5 per cent (1:20)
- Ensuring that where walkways have gradients greater than 3 percent (1 in 33), provision is made for regular level rest areas with benches (refer to AS 1428.1: Design for Access and Mobility)
- Ensuring major on-site paths at building entries do not exceed a 2.4 percent slope (1 in 40)
- If possible, do not locate ramps, steps or kerbs in arrival court areas

- If possible, keep gradients below 3 percent (1:33)
- Using expansion and contraction joints (less than 12.5mm in width) for paving and walking surfaces
- Avoiding soft, loose or uneven surface materials (e.g., loose gravel, pebbles, raised cobblestones, 'Crazy paving' and slippery surfaces)
- Using different coloured edging for paths to clearly mark edges
- Providing even lighting along paths (so that deep shadows are not cast beyond the path)
- Designing paths with good drainage
- Designing paths and sitting, viewing and resting places with appropriate microclimates, maximising or minimising such environmental and weather factors as required: solar access, glare and wind
- Locating intimate seating and rest areas within 7m of the path and at appropriate intervals
- Avoiding conflicts and/or dangers to vulnerable users of open space by interference with the flow of pedestrian or cycle traffic through the development
- Avoiding projecting signs and meter boxes along pedestrian routes which could be hazardous to children and others with disability (particularly people with vision impairments)
- Ensuring that it is easy to hold a mental map of the residential open space environment. Some children (and others) with disability will have impairments that may cause them to easily lose their way
- Providing frequent and readily accessible drinking fountains

Designing for *children* with disability

Ramps

- ◆ Design ramps with a gradient not greater than 1:12 or an 8.3 per cent maximum slope (recommended slope 1:20 or 5 percent). Ramp runs should not be greater than 10 metres in length, with intermediate platforms not shorter than one metre and stopping and turning platforms not smaller than 1.6 metres on each side
- ◆ Pay particular attention to the design of handrails, ensuring that they extend approximately 300 mm beyond the top and bottom of the ramp support and parallel to the floor, with 20 mm free space between handrail and wall if rail is to be grasped. On steps, provide two handrails. The lower handrail can be used by children and
- ◆ Equip open structured free-standing ramps, where falls from ramps to the ground are possible, with a double set of continuous handrails with an extension of 0.5 metres at both ends and a wheel guard at the end of the ramp (see AS 1428)

Walkways

- ◆ Design walkways to be stable, firm *and* relatively smooth, with a non-slip hard surface

Safety of children with disability

- ◆ Avoid projecting signs and meter boxes along pedestrian routes which could be hazardous to children and others (particularly people with vision impairments)
- ◆ Children with disability are particularly vulnerable to accidents, therefore, vigilance in maintenance and repairs of hard surfaces is required
- ◆ Specify materials that do not require constant replacement or repair

People with Other Impairments

- Ensure that it is easy to hold a mental map of the residential open space environment. Some children (and others) with disability will have impairments that may cause them to easily lose their way. Simple and legible arrangements need not conflict with the need for complexity in the play opportunities provided
- Provide shading as often as possible, as it is essential for most groups
- Provide frequent and readily accessible drinking fountains

2.7 Culturally and Linguistically Diverse (CALD) Communities

Some cultural groups may find the lack of territorial definition in housing (and associated open spaces) inappropriate. Definition of territory (space over which a person feels some possessiveness) is important to all people, regardless of ethnic or cultural origin. Strategies to maximise satisfaction with on-site open space for diverse cultural groups and members of CALD communities include:

- Providing ground-level dwellings with fenced or buffered private open space, a separate front path and a separate porch or porch-type space, or alternatively providing upper storey dwellings with a balcony with discreet space for clothes drying
- Providing opportunities for personalisation outside a ground-level dwelling (gardening, fencing, paving, hanging plants, selecting paint colours, etc.). (See Figure)
- Orienting back yards so that they receive sufficient sun for a large part of the day to support both food production and socialising
- Designing back yards of ground-level dwellings to be well drained to support gardening
- Designing front gardens with a 2m minimum depth
- Considering rooftop gardens (green roofs) that can be used for get-togethers, community gardening and informal recreation



Figure 12: A personalised entry that creates a sense of individuality

Photo: Wendy Sarkissian

3.0 Specific Considerations for Private Open Space

3.1 Private Open Space

Private open space comprises those spaces in a housing development directly associated with an individual dwelling and which are directly accessible from that dwelling. These spaces include gardens, yards, terraces, courtyards and patios (at ground level) and balconies, decks and terraces (above ground level). Because of the importance of indoor-outdoor connections in a sub-tropical climate, the design, orientation and furnishability of these spaces are critical to resident satisfaction.



Figure 12: Private open space: general site overview

Image: Brendan Hurley

The design elements of Figure 12 relevant to this section include:

- Clear differentiation between private and shared open space
- Clear territorial definition of private open space, including clearly identified entries
- Fencing and railings that provide privacy whilst allowing for connections and surveillance to shared spaces
- Balconies that provide visual access to shared spaces

The value of private open space in medium-density housing cannot be underestimated. All dwellings must have direct and private access to their own private open space or spaces.

3.2 Basic Principles for Providing Private Open Space

A number of basic principles should be used in the planning and design of on-site private open space:

A. SUITABILITY OF AREA FOR PURPOSE

Strategies to ensure the suitability of the area for purpose include:

- For ground-level dwellings separating the activities that typically occur in 'front yards' (e.g., entertaining) from those occurring in 'back yards' (e.g., airing clothes, potting plants, storing equipment)
- In some cases, where only one private space is provided, including on balconies, attempting to accommodate as many of the front and back yard activities as possible in an harmonious manner
- Designing private open space to be square or nearly square to be able to be furnished appropriately to facilitate conversational arrangements of tables and chairs

B. ASPECT/ORIENTATION

The aspect of private open space is paramount to its usability. Strategies to enhance its amenity include:

- Locating and designing all private open spaces to receive adequate , ideally orienting spaces to the north or nearly north
- Avoiding south-facing yards with high walls or hedges, as it will be difficult to grow or maintain plants or lawn there
- Avoiding significant overshadowing from adjacent buildings, fencing or trees in designing the development as far as possible

C. TERRITORIAL DEFINITION

Strategies to define territoriality are important to private open space. They include:

- Designing clearly defined private open space areas (e.g., with fencing, buffers) so that children do not intrude where their play is inappropriate
- Clearly differentiating private open spaces from shared open space
- Designing ground-floor private outdoor spaces to be directly accessible to shared open spaces where possible

D. PRIVACY

Privacy of private open space, including visual and noise privacy, is important. Strategies to enhance privacy include:

- Using privacy screens, fences or landscaping to separate neighbours
- Protecting private open spaces from noisy places such as roads and play areas
- Providing clear regulations for night use of play areas and pools
- Locating seating and play equipment in recreation areas away from bedroom windows
- Adequately screening private open spaces for privacy from passers-by or adjacent dwellings
- Protecting private open space from overlooking windows of other dwellings
- Avoid locating paths too close to other dwellings or windows

- Designing the entry to a ground-level dwelling and associated paths and landscaping to communicate the message of a 'house-on-its-own-land'



Figure 13: Private courtyards need privacy from shared open space

Photo: Wendy Sarkissian



Figure 14: Paths too close to dwelling windows

Photo: Wendy Sarkissian

E. VIEWS OUT

In private open space, it is valuable for residents to be able to see into the shared open space of the development or even further into the public realm. This principle will help make their yard or courtyard feel less cramped, can support natural surveillance and can encourage casual social encounters, such as calling over a fence to a neighbour. This could be achieved through:

- Careful selection and detailing of fencing
- Appropriate landscaping with plants chosen that are no higher than the desired ultimate height (to reduce the need to hedge or prune)

F. LANDSCAPING

The intention of any landscaping in private open space should be to encourage maximum opportunities for resident personalisation, furnishing and modification. Strategies to achieve this include:

- Paying careful attention to aspect and orientation so that they derive enough sun to permit landscaping to flourish, while providing shade in summer
- Planting trees where possible to ameliorate climatic conditions
- Avoiding the use of thick hedging which reduces usable space and limits grass growth

G. SEASONAL USE AND USE AT DIFFERENT TIMES OF THE DAY

Because of the importance of private open space, it is important that these small spaces be designed and located with care. North-facing courtyards with high (1800mm) opaque fences don't allow sufficient light into the garden or yard. These dark spaces perform almost no function for residents and cannot be used for play for small children as grass rarely grows well. Strategies to increase the usefulness of private open space across different seasons and times of the day include:

- Attempting to ensure that as many as possible medium-density dwellings have private open space which enables residents to sit outside on a winter day, dry laundry and entertain.
- Especially in housing for lower income and older people, ensuring equity of provision in terms of the seasonal usefulness of a private space

H. EASE OF MAINTENANCE

Residents will care for private spaces that have low maintenance needs. Strategies to achieve low maintenance include:

- Using specific materials that are easy to clean and replace or modify
- Specifying non-staining paving materials
- Paying attention to drainage
- Designing private open spaces (if possible) so that it is not necessary to climb on a ladder to replace globes or fittings
- Specifying robust equipment made of durable materials
- Allowing for waterproof storage of basic tools, equipment and materials for maintaining a small garden

3.3 Specific Considerations for Ground-Level Private Open Spaces

Ground-level open spaces should be designed so that they:

- Use level, hard-surfaced areas (deck or patio) for chairs and tables adjacent to the dwelling
- Provide an extensive area of bare soil for plants, lawn and trees,
- Ensure a covered or weather protected portion of the outside area
- Provide space for a lockable storage shed (e.g., for garden equipment and bicycles)
- Provide adequate space for a clothesline with adequate access to sunlight
- Provide an outside tap with adequate provision for drainage, both in front and rear yards if relevant
- Provide a protected outside power outlet

- Enclose back yards with fences and gates to enable independent play without the presence of an adult and to keep in dogs
- Provide enclosed areas such as a front porch for toddlers' 'doorstep play'
- Consider providing a storage cupboard for tricycles and prams adjacent to the dwelling entry

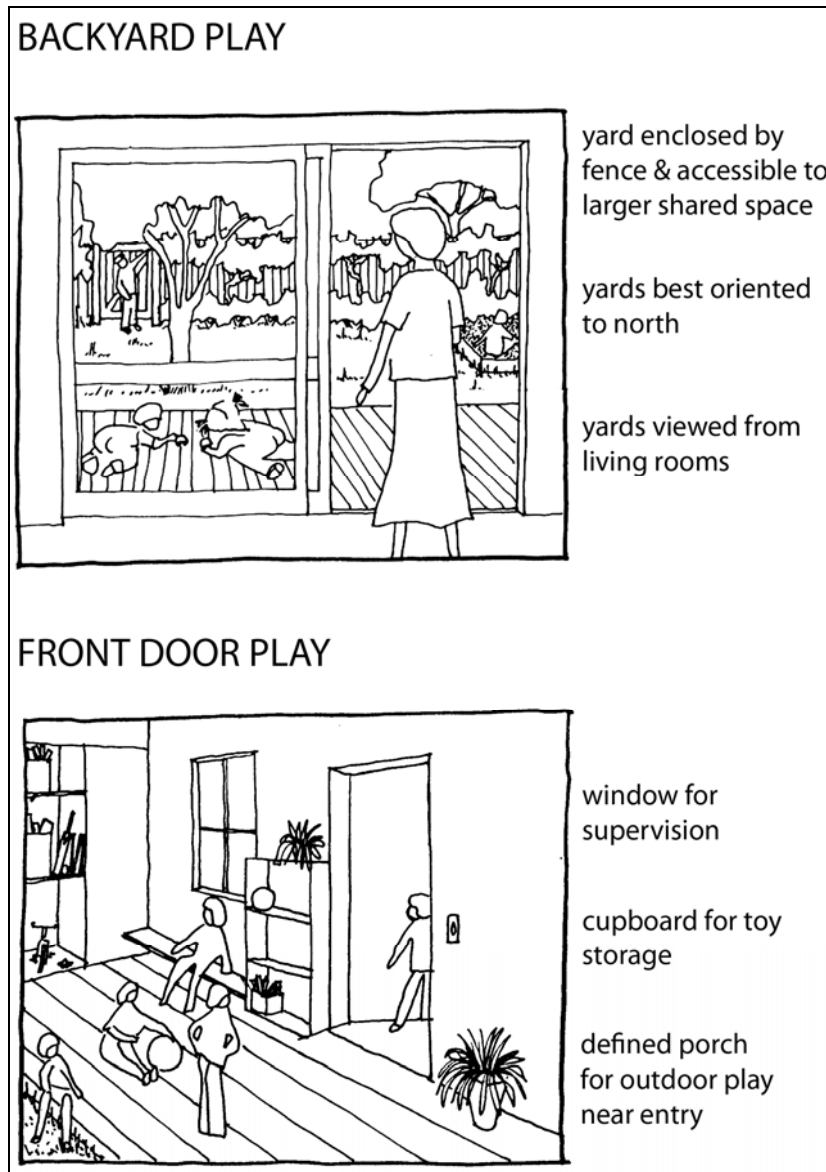


Figure 15: Backyard and front door play

Image: Kevin Taylor (after Cooper Marcus and Sarkissian, 1986)

3.4 Specific Considerations for Above-Ground Private Open Spaces

Above-ground balconies (or decks) are a critical component of higher density living in a sub-tropical climate. They can provide a socialising space that is a physical extension of the living area and can literally make or break 'the success of a housing development from the residents' perspective. Thus, it is important that the following are considered:

- Provide all upper storey dwellings with private balconies
- As far as possible, design balconies for year-round use, providing shade in summer and sunlight in winter
- Wherever possible, locate balconies to take advantage of a northerly aspect for solar access
- Orient at least one balcony to protect it from weather extremes
- Consider including movable shade devices to minimise direct sun entry, particularly in tropical areas
- Locate balconies to be directly accessible from indoor living areas to enable a seamless transition from indoor to outdoor living
- Avoid designing access to balconies solely off bedrooms (as they are rarely used)
- Provide easy kitchen access to the balcony to readily enable outdoor cooking
- Balconies should support use for outdoor dining and socialising, keeping pot plants, clothes airing and/or children's play; a minimum dimension of 3m x 3m will support this
- Balconies in larger dwelling units should be of adequate size to allow:
 - an appropriately sized table and potential barbeque/outdoor cooking equipment placement and desirably a *chaise longue*
 - a square or nearly square shape for conversational furniture arrangement
 - a clear width of 1.8m, with 2m preferred, for movement in a wheelchair and sufficient space to allow for turning (Australian Standard 1428.2)



Figure 16: A keen gardener can make the most of a small balcony provided its orientation is correct for growing plants

Image: Clare Cooper Marcus

- Ensure all balconies have railings which comply with the relevant building provisions and increase feelings of security and privacy and reduce visual intrusion
- Avoid horizontal elements on balconies to low-rise dwellings where these could be used as a natural ladder for burglars



Figure 17: 'Natural ladders' diminish the security of balconies

Photo: Wendy Sarkissian

- Design railings to allow a view outward and down from a sitting position: the top railing should not block vision
- Use see-through railings where a balcony blocks view from a window

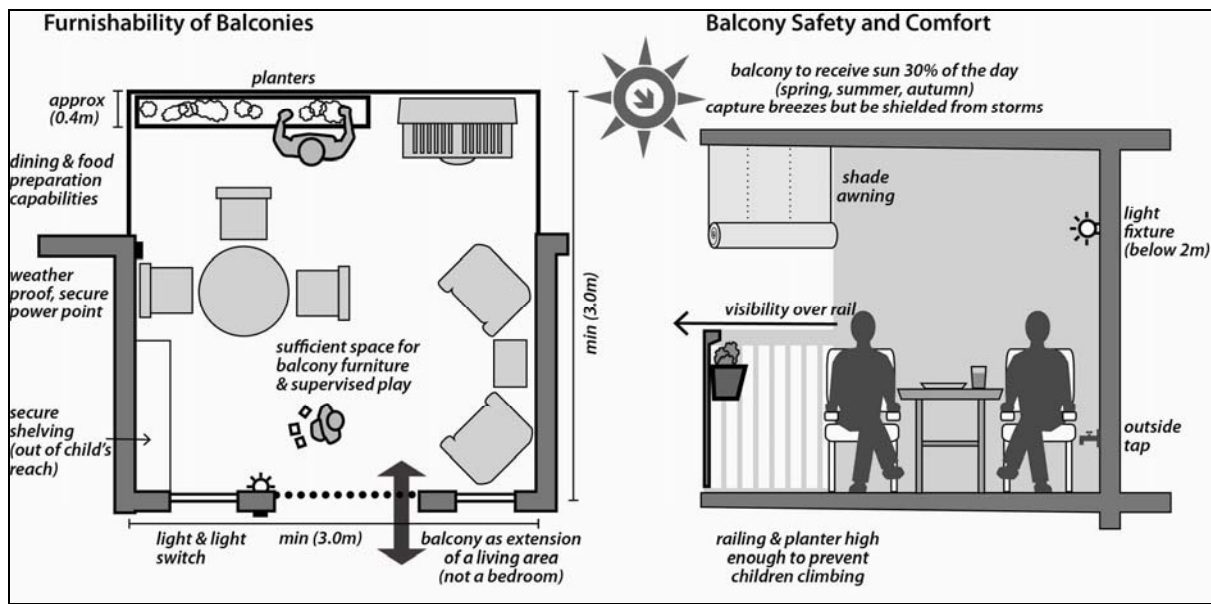


Figure 18: Balconies and decks

Image: Brendan Hurley

- Specify floor finishes to be non-slip and non-glare
- Avoid a step or raised sliding door tracks
- Consider a removable threshold: it allows wheelchair access and reduces problems of water penetration
- Locate a light switch directly inside the dwelling by the door
- Provide an outside tap for watering plants
- Provide a protected outside power outlet
- Position the light so the globe can be changed without needing to climb on a stool or ladder
- Locate the light so that it illuminates task areas (such as the likely location of barbeques and tables)
- Use glass or partly glass (non-sliding) doors if possible
- Locate windows that allow views over outdoor activities for residents in the living room
- Locate the balcony so that it does not block all views to the ground from indoors
- Consider the opportunity to install a cat door for lower dwellings and especially for ground-floor dwellings
- Maintain privacy while providing views of activity

4.0 Specific Considerations for Shared Open Space

4.1 Shared Open Space

Shared open space complements the role of private open space in medium-density housing and is essential to resident satisfaction. It has particular value for certain vulnerable resident groups: low-income people, older people, pre-school children, people from some traditional cultural groups (CALD communities) and people with a disability. Even in small sites, shared open space can have valuable benefits for residents if it is carefully located and designed.



Figure 20: Shared open space: general site overview

Image: Brendan Hurley

Design elements illustrated in Figure include:

- Shared open space well located for accessibility to the dwellings it serves and for solar access
- Multiple shared open spaces provide a variety of activities for different users
- Site servicing and water sensitive urban design supports primary function of shared open space for leisure, recreation and other use by residents
- Visitor parking spaces transformable as hard surface for children's play
- Natural surveillance over shared open space
- Clearly marked pathways and ensure they respect the privacy of dwellings

- Rooftop garden augmenting ground-level shared open space and adding to variety
- Changed width at driveway entry slowing vehicles entering the site
- Clear sightlines along paths conferring safety on users

4.2 Basic Principles for Providing Shared On-Site Open Space

A number of basic principles should apply in the planning and design of on-site shared open space:

A. LOCATION/ORIENTATION

As the purpose of shared open space is to encourage use by residents, it should have the best possible location and orientation for climatic conditions. Strategies include:

- Locating shared open space where it receives some winter sun and offers shade from direct summer sun
- Locating shared open space to avoid significant overshadowing from adjacent buildings, fencing or trees
- Considering the opportunities for external amenity contribution of shared on-site open space (although not at the expense of on-site space)
- Considering the opportunities for planting to contribute to the streetscape
- Ensuring that shared open space is not the 'leftover space' but is well integrated into the development and suitable for a range of uses by residents
- Where design seeks to use shared open space for multiple site functions (such as water sensitive urban design), ensuring design supports the primary role of shared open space to meet the outdoor leisure and social needs of residents. Ensuring shared open space is not provided in the setback areas, which can result in unusable open space
- Considering opportunities for above-ground shared open space (e.g., rooftop gardens) and the opportunity for these spaces to provide visual access to greenery from residences and the street

B. TERRITORIAL DEFINITION

A number of strategies can be used for territorial definition in shared open space:

- Consider providing a series of connected, medium-sized open spaces, rather than one large or several identical spaces
- Differentiate among the character of individual open spaces or courtyards that are the territory of a group of dwellings
- Specify that each shared open space is clearly the territory of a specific group of dwellings
- Provide natural surveillance of shared open space from the group of dwellings that 'own' it
- Promote access to shared open space either directly from the dwelling or via ground-level private open space
- Locate paths in shared open space so that they do not violate the privacy of dwellings and private yards
- Use environmental cues, such as changes in footpath material, change in grade or elevation, or levels of lighting to define legitimate uses
- Aim to achieve centralisation of legitimate night activities to enable supervision

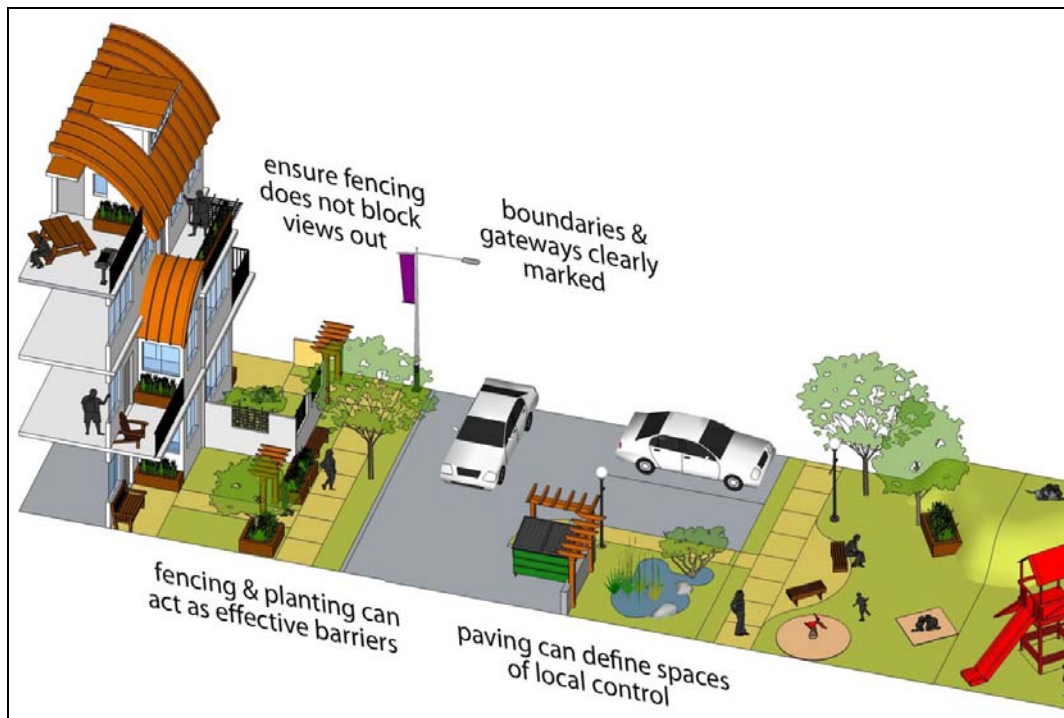


Figure 21: Territorial definition of shared open space

Image: Brendan Hurley

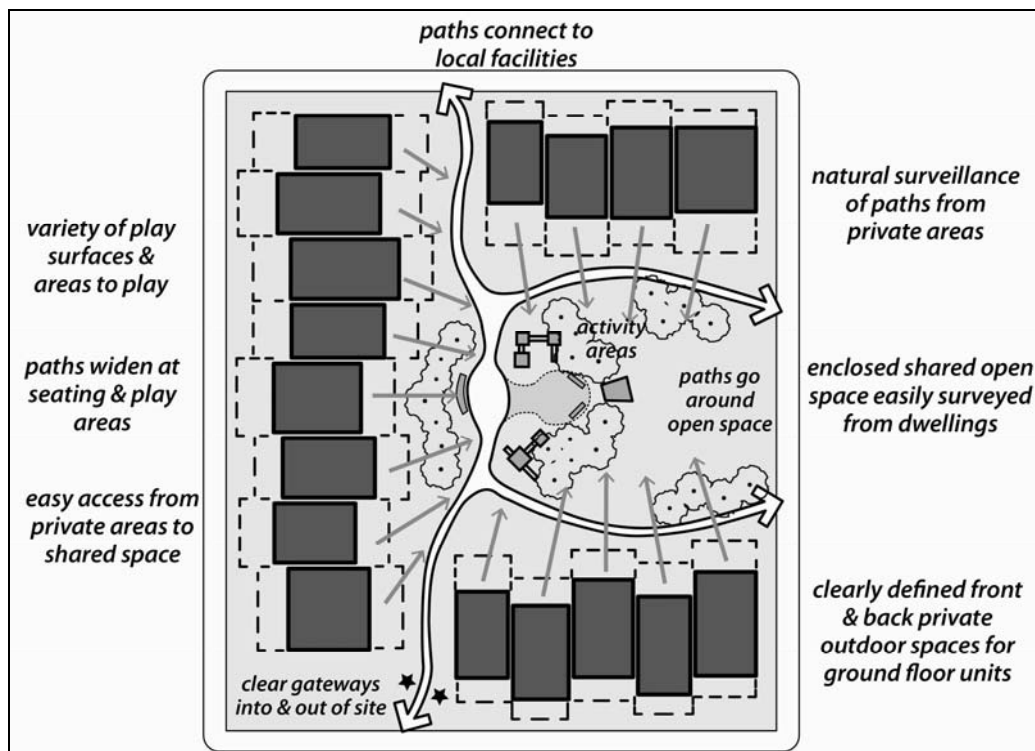


Figure 22: Surveillance of shared open space

Image: Brendan Hurley

C. DESIGN FOR SPECIFIC USERS

A range of uses in shared open space will be necessary to accommodate a variety of resident needs. Further, open space will need to be robust and responsive over time to meet changing requirements based on future resident needs and on the ageing of the population.

The range of uses in shared open space might include:

- Provision for family or communal barbecues and picnics
- Children's play
- Entertaining and socialising, including extended family groups and communal events
- Eating (individually and in groups)
- Relaxing
- Exercise and fitness
- Solitary reflection and retreat
- Private or communal gardening

Adopt strategies to cater for these type of needs such that they:

- Design shared open space to support a range of different activities and user needs
- Provide individual and communal picnic/barbeque shelters or structures, equipped with barbeques, tables and seating and sinks/food preparation benches
- Ensure appropriate space dimensions for shared landscaped spaces such as:
 - Design square or nearly square open spaces
 - Avoid large shared courtyards; rather, provide intimate subspaces
 - Provide at least one grassed area of adequate size for play (e.g., ball games)
- Separate play area areas from adjacent dwellings by means of landscaping, fencing, walls, earth mounding or distance
- Ensure that walls of dwellings at ground level facing shared open space have high-level windows or windows with double glazing to reduce potential noise transmission problems
- Provide peaceful places for people to relax and reflect, including special features such as gazebos, ponds, water features, sculpture or bench seating
- Locate intimate seating areas close to pathways and at appropriate intervals so that older residents can rest and once seated, can recognise people walking by
- Ensure that path width allow for ease of wheelchairs and have regular nodes where two wheelchairs may pass unencumbered (refer Australian Standard 1428.2)
- Ensure that conversational seating areas do not interfere with bike or pedestrian movement
- Ensure that space is available for people in wheelchairs to use fixed seating and to allow for manoeuvring a wheelchair into place (refer Australian Standard 1428.2)
- Provide a range of seating options, located to avoid extremes of sun and wind

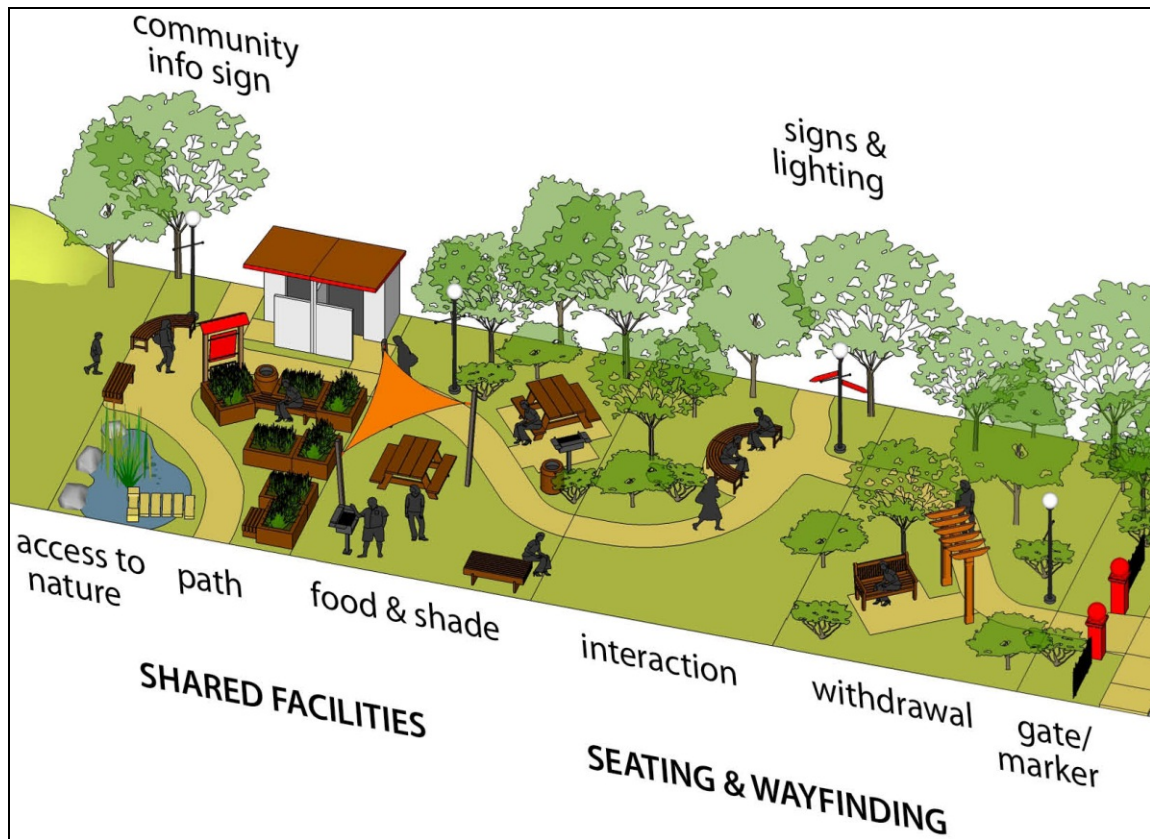


Figure 23: Seating and wayfinding

Image: Brendan Hurley

- Consider a walking circuit that promotes walkability and provides for recreational walking, strolling and unforced social encounters
- Consider including fitness stations
- Provide one major pathway that connects most dwellings to on and off-site activities
- Connect the pathway system to off-site facilities, amenities and pedestrian routes (see Figure 22 above)
- Ensure that on-site pathways and signage promotes ease of wayfinding, accommodate predictable usage patterns and lead directly to safe crossings en route
- Ensure pathways are buffered to protect neighbouring dwellings
- Ensure parking areas do not block pedestrian paths to and from the site
- Where the site is large enough, provide options for choosing alternate routes, including longer routes for recreational walking



Figure 24: Design for a range of uses

Image: Brendan Hurley

- Allocate outdoor areas for gardening spaces for use by residents
- Locate gardens to ensure visual observation from inside dwellings. A well maintained garden can act as a cue that the space is observed
- Provide weatherproof, lockable storage space for gardening tools, materials and equipment
- Consider the incorporation of compost bins and worm farms when designing garden spaces
- Incorporate rooftop and wall garden space where appropriate
- Ensure convenient access to tank and greywater supplies

D. LANDSCAPING

Landscaping of shared open space should serve a specific purpose, be appropriate to that purpose, be able to withstand normal wear and tear and be easily maintained.

Strategies include:

- Selecting plants appropriate to the local setting and which will survive well under local and particularly sub-tropical/tropical conditions
- Considering watering requirements
- Considering maintenance requirements
- Considering height and privacy versus surveillance
- Providing landscaping that recognises seasonal and diurnal differences (e.g., diversity throughout the year, flowering plants at different seasons)
- Encouraging resident participation in on-site gardening and maintenance where feasible
- Recognising that thorny shrubs have their uses in deterring entry but may be impractical around play areas and attract litter

E. MANAGEMENT AND MAINTENANCE

Management of shared open space is strongly linked to overall resident satisfaction and high-quality maintenance and speedy repair of damage can reduce graffiti, damage and vandalism. Strategies to encourage appropriate maintenance include:

- At the pre-design stage, clearly spelling out management and maintenance arrangements for shared landscaped spaces
- Specifying landscape treatments which require minimal maintenance
- Specifying robust equipment made of durable materials
- Designing seating, site furniture and play equipment to withstand predictable use
- Providing litter bins
- Avoiding corners or small niches ('leftover spaces'), which collect litter and are difficult to clean
- Using suitable ground cover for 'hard-wear' areas

In addition, ensure that maintenance and management responsibilities for shared landscaped areas are clearly defined, including:

- Setting out clear boundaries between shared and private open space
- Ensuring responsibilities are written into body corporate agreement and/or owners manual
- Containing non-essential body corporate costs for security, cleaning, maintenance and insurance
- Providing clear direction about hours of usage for shared facilities

Community 'ownership' of shared spaces can also be encouraged. Strategies include:

- Encouraging the use and 'ownership' of shared spaces through a series of social events and possible community capacity building and community development activities
- Considering a collaborative process between the developer, body corporate and residents with arrangements for providing welcoming activities to assist new residents to get together and establish social networks
- Assisting the establishment of a group or resident association which could also assist in establishing and building connections to existing networks of community groups organisations or to form new ones

F. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

While CPTED principles should be a primary organising principle for site planning, it has direct relevance to the specific design and management of on-site shared open space. If resident safety issues are not considered at the planning and design stages, especially in high-crime neighbourhoods, on-site shared open space will not be used or may become a location for inappropriate behaviour by residents or outsiders.

Include CPTED strategies into shared on-site open space:

- Ensure that any spaces that may be used by vulnerable groups and may attract inappropriate behaviour are in locations with maximum opportunities for surveillance
- Take care when providing privacy screening (optically permeable rather than solid screens) so that criminal activity can be monitored
- Avoid 'short-cuts' through residential developments that encourage non-legitimate users to move through areas en route to another location
- Provide clear sightlines from within the building at the entry so that occupants can see outside before leaving the building.
- Ensure exterior lighting is very effective to facilitate good interior-to-exterior surveillance through windows

- Provide high levels of even illumination at entries so that occupants can see out some distance from the entry before leaving the building
- Ensure that lighting at entries does not create a blinding effect through glare and/or shadows, thus making it difficult for eyes to adjust to different light levels
- Select low ground cover or high-canopied trees, clear-trunked to a height of 2m in areas where crime is likely to be a problem (noting that thorny shrubs while they have their uses in deterring entry, may be impractical around play areas and attract litter)

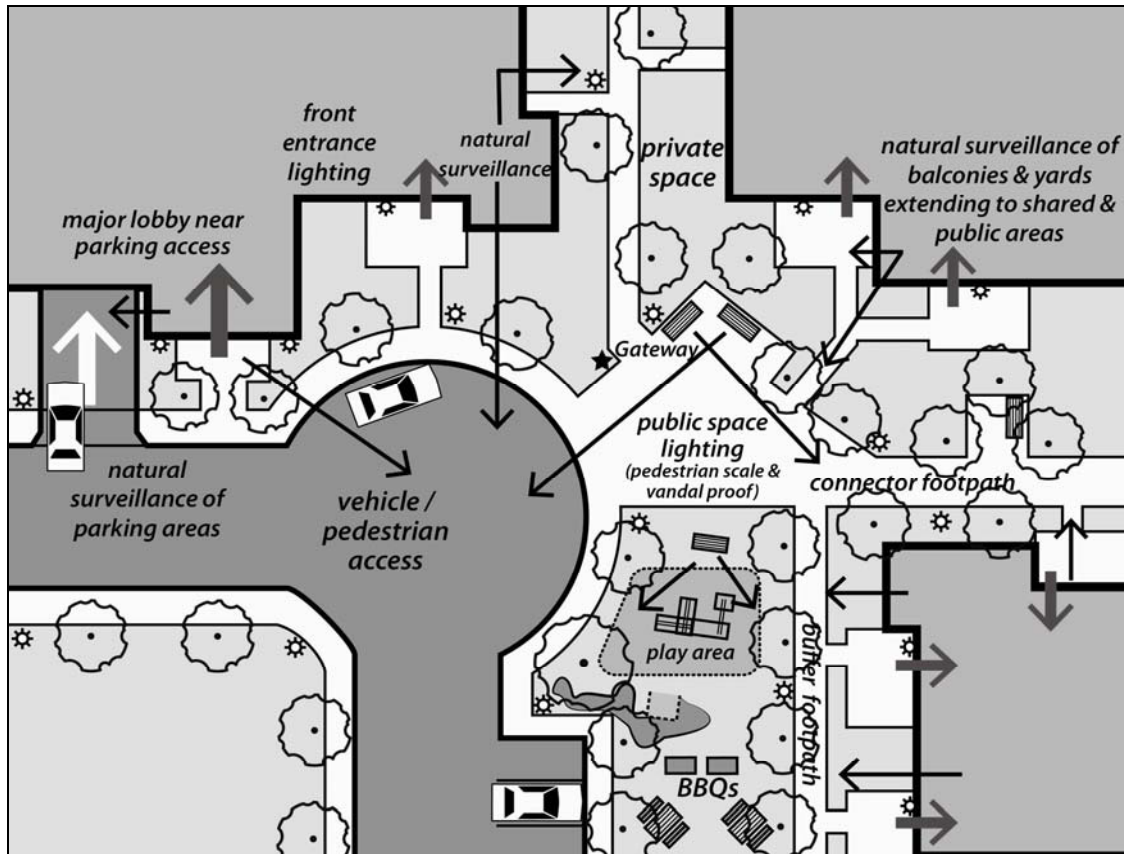


Figure 25: Natural surveillance of shared of shared open space

Image: Brendan Hurley

- Ensure that pathways and areas intended for night use are lit to the same level as the street to indicate that they are 'safe routes'
- Provide a clear demarcation in lighting and landscaping between areas that are likely to be deserted at night and areas where legitimate activity is likely and should be encouraged
- Select and maintain landscaping elements so that they do not block light for pedestrian routes
- Strategically locate trees and light standards to ensure that foliage does not block light
- Ensure that any low-level vegetation is trimmed in surrounding areas
- Ensure that open space and associated amenities are well maintained, indicating that the area is well cared for by ground staff and residents
- Minimise potential entrapment locations along pedestrian routes (e.g., small, confined areas shielded on three sides by some barrier e.g., fire stairs or loading docks)

- Limit access to loading docks and other restricted areas off pedestrian routes by measures such as dead-bolted doors or gates, or lock potential entrapment spots after hours
- Where entrapment areas are irremovable, specify appropriate, high-intensity lighting and aids to visibility such as mirrors
- Consider security patrols to pay particular attention to possible entrapment spots
- Avoid providing accessways in areas where little pedestrian traffic is expected
- Attempt to focus lighting on pathways and laneways and away from dwellings so that it does not shine into dwelling windows
- Provide shades to screen dwelling windows from direct rays of lights if necessary

G. HOUSING ADJOINING PUBLIC OPEN SPACE

Where a medium-density housing development adjoins public open space:

- Design housing to over-look the park, providing natural surveillance to improve safety
- Take care to clearly distinguish which spaces are for public use and which are for resident-only use (e.g., using planting, paving, fencing, gates, signage)
- Provide direct and convenient access from the housing development into the park
- Aim to achieve high levels of legitimate pedestrian activity at night to help to confer safety on shared and public spaces
- Provide clear ownership cues at residential edges



Figure 26: The interface between a park and medium-density housing

Image: Brendan Hurley

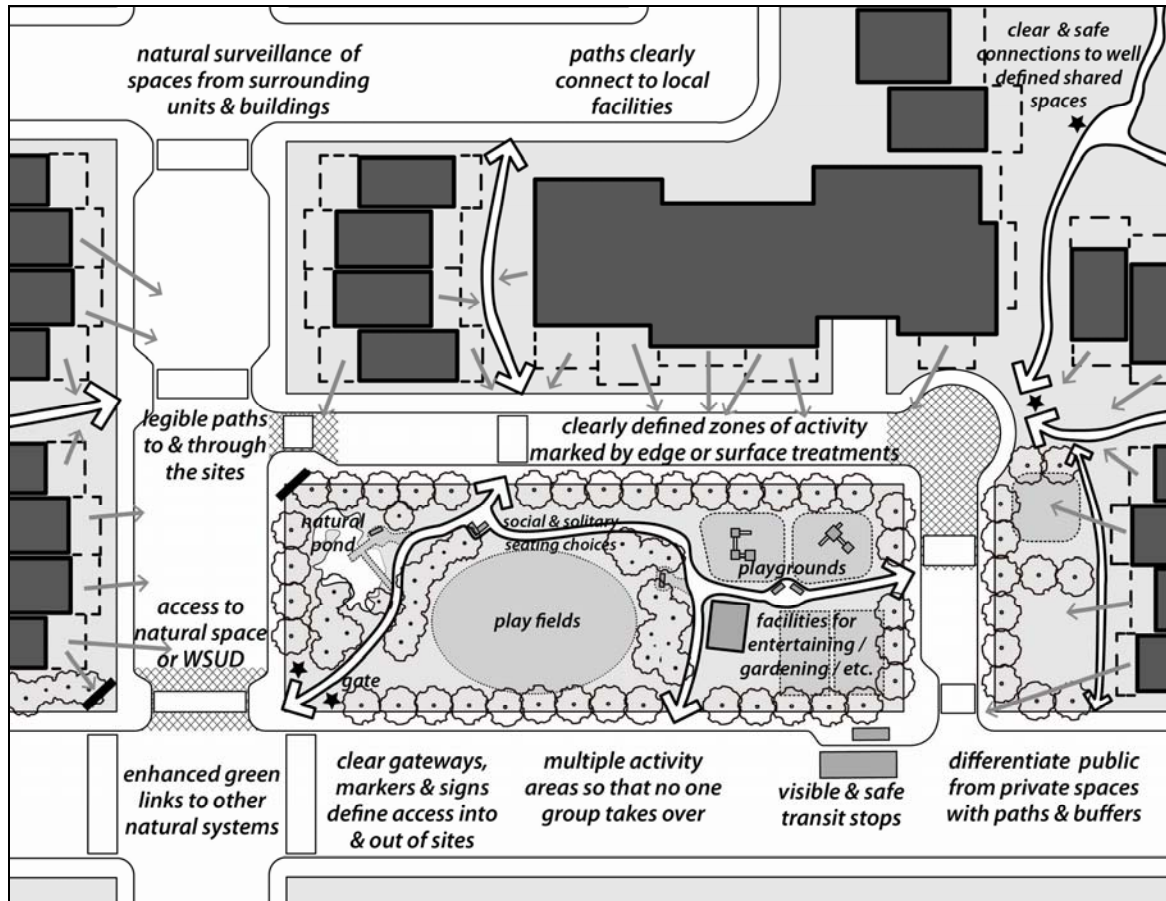


Figure 27: Natural surveillance of public open space

Image: Brendan Hurley

GUIDELINES FOR PUBLIC OPEN SPACE¹

The primary focus of these guidelines is the planning and design of public parks and plazas and commons in areas with concentrations of medium-density housing. Its primary focus is the behavioural basis of open space design and is not intended as a park planning guideline. They address the following aspects of open space in medium-density housing areas:

1. The role of public open space
2. Types of public open space
3. The qualities of open space
4. The needs of specific residents
5. Innovations in the provision of public open space
- 6.

1.0 The Role of Open Space in Medium-density Housing Areas

Public open space plays a variety of roles in promoting sustainable living in medium-density areas by facilitating social interaction, promoting physical and mental health, enhancing the attractiveness of the urban environment, aiding cooling of urban areas and supporting natural systems. Open space can also support social encounters and community activity that help bring people together, fostering friendships and developing social networks. Public open space plays a role in meeting the following needs in medium-density housing areas:

- **Diversity:** Open space that it is planned and designed to suit the demographic, cultural and behavioural characteristics of a local community is more likely to be well used. Design should promote diversity of activity across a range of user groups (including different age groups) and be responsive to changing user needs across the course of a day and over changing seasons.
- **Children:** Increasingly residents in medium-density housing in Australia have children, with children having a greater need for open space and access to Nature for their play, mental health and social and physical development. Parents often visit parks so their children can play and to meet other families. Young children in low-income households and those in some households where territorial range of children is not encouraged (especially for girls) have particular needs for open space that is close to home.
- **Older people:** Ageing of the population is common to most contemporary communities, including medium-density housing areas, with many older people living alone. Social contact and physical activity, particularly walking, are significant factors in promoting the health and wellbeing of older people. To meet the needs of older people, public open space needs to be close to home and convenient to access, offer comfort and confer safety.

¹ **Note:** Material for this Part has been drawn from a range of sources. Key references include: Bateman, Sarkissian, Young, 2012; Byrne and Snipe, 2010; Forsyth and Musacchio 2005; Hutchinson, 1994; Kaplan 1995; Kellet and Rofe, 2009; Marcus and Francis, 1998; UN Habitat, 2011. Readers are referred to the References for a full list of sources.

- **Teenagers:** In well-designed open space that caters to their needs, teens, whose energy and boisterousness may seem inappropriate in a dense housing area, can 'let off steam' or simply 'hang out' with friends in spaces which they can enjoy as their 'own' territory.
- **Vulnerable groups:** A number of vulnerable groups have a high need for access to quality open space: older people (particularly those on low incomes), people from some culturally and linguistically diverse (CALD) backgrounds, children and people with a disability have lower mobility and need access closer to home. The territorial mobility of low-income women is also generally limited. Small pocket parks play an important role in meeting the needs of these groups. Low-income households can rely on greater access to public open space, as they cannot afford other forms of leisure. Lonely people can meet or simply be in the presence of others socialising.
- **Pet owners:** Dog owners in medium-density housing have limited on-site opportunity to exercise dogs and need access to dog parks and walking trails. There are significant benefits from the social encounters among dog walkers whose regular visits to a park (whether or not it is a designated dog park) can also alleviate loneliness and social isolation.
- **Climate responsiveness:** Open space can offer ecological support for biodiversity, species migration and urban repair. It can also counteract the 'heat island' effect of dense urban development helping to cool and ventilate the neighbourhood, along with mitigating greenhouse gas emissions (through carbon sequestration).
- **Environmental services:** Open space can have an important role in supporting urban bio-diversity, attenuating flood waters and addressing long term food security by offering residents opportunities to grow their own food (e.g., in community gardens).
- **Health and physical activity:** The greater the proximity (and directness or route) of public open space to home, the greater the likelihood of physical activity. Higher density neighbourhoods should promote the provision of 'proximate' public open spaces with good connectivity. Public open space should be within walking distance of residences and well connected to other public open spaces using green streets, linear parks and/or cycling and walking trails, to encourage physical activity.
- **Health, child development and access to Nature:** The restorative qualities of parks and the access they provide to Nature have beneficial effects on human health and wellbeing (even a view of a landscaped space from a dwelling window can have beneficial effects). In residential neighbourhoods, access to Nature can provide both psychological and spiritual nourishment; a space where a person can seek solace in the natural world, or where lonely people can meet or simply watch others. Increasingly children grow up without direct contact with the natural world. For children in a medium-density environment it is particularly important that they have access to Nature to develop their ecological awareness and responsibility.

2.0 Types of Open Space in Medium-density Housing Areas

Open space can be classified into various types or *typologies* according to its function, use, size and the type of facilities offered. There is no standard classification of typologies. This guideline does not propose a typology; instead it describes the types of open space likely to be most relevant in medium-density housing areas (Table 2:).

Table 2: Open spaces suitable for medium-density housing areas

Type of Open Space	Description	Notations
Pocket park	Small space with few facilities meeting limited recreational needs – typically seating and children's play. Some natural features, including small grassed area and trees.	Provides proximity to home especially important for children and older people who don't have as great a range as other residents.
Neighbourhood park	Larger area providing a recreational and social focus and supporting informal active and passive recreation. Provides play equipment, picnic and barbeque facilities and greenspace. May have some limited sporting facilities. Natural features include grassed areas and shade planting.	Neighbourhood parks in medium-density areas need to support a diversity of activity to meet residents' needs. This is unlikely to be possible where these parks are dominated by sporting fields.
Plazas and commons	Plazas and commons include town squares, building forecourts, green roofs and 'in-between' spaces in the public realm for public use. Act as neighbourhood meeting places and places for civic events. Plazas and commons often have highly regulated activity and provide for sitting, lingering and meeting. Often include public art (which can be interactive for children's play). They can be paved, landscaped or both.	<p>Locating a mix of retail, entertainment and dining uses at their edges will add vitality and attract people to the space. Connecting plazas and commons with linear corridors (green streets) to the open space network will increase levels of physical activity.</p> <p>Careful design and programming of these spaces will ensure their suitability for all-season use and help reduce the potential for their contested use.</p> <p>Some spaces are 'quasi-public spaces' with some traits of public space, but with restricted hours of entry, or right of entry protections that can be discriminating (particularly towards young people). Care should be taken to ensure equitable access for all users if reliance is placed on these spaces.</p> <p>Plazas can also create heat-island effects – especially in denser built environments and will need to be shaded by carefully integrated vegetation if they are to function as open space during the hot times of the day and in summer.</p>
Green roofs (subset of plazas and commons)	Can provide recreation spaces, visual relief, habitat and even cooling effects. Roof-top gardens can act like pocket parks and can also be used to grow food.	Vertical green spaces such as green walls and even cliffs and overhangs can add to the sense of open space. These spaces can provide sound attenuation, visual relief, habitat and even cooling effects. Care needs to be taken when planning for young children due to climbing and falling risks.

Type of Open Space	Description	Notations
Privately controlled spaces offering public access	Shared use of open space owned and managed by schools, churches or sports club facilities. Typically includes playing fields and courts and children's play equipment.	These spaces should only be relied on instead of public open space if their long term accessibility can be guaranteed. Continuity of access generally can't be guaranteed if the facility is sold or if there is a change in the personnel authorising access. Potential obstacles may also exist with insurance and indemnity issues, or restricted hours of use.
Connectors: green streets	As part of the general public realm, green streets are linear corridors that give priority to walking, cycling, jogging, dog walking and greening the local area. Treatments on green streets can include traffic calming, footpath widening, seating shade trees, grassing and other landscaping).	Green streets, while part of the public realm, are not public open space as such. By connecting public open spaces, green streets increase accessibility to a diversity of open spaces as well as to other local destinations (e.g., shopping centres and schools). They also encourage higher levels of physical activity. Green streets can provide transitory encounters with Nature through the landscaping used. They function as complementary spaces not supplementary ones.
Connectors: linear parks	These spaces can be waterway corridors, disused transport corridors (with the potential for re-use) that provide linear connections within the open space network for walking, cycling, jogging, dog walking and greening the local area.	These spaces are public open space and like green streets can provide important connections within the open space network, as well as to other local destinations. They tend to be mostly used for exercising, commuting and relaxation.

Table 2: Open spaces suitable for medium-density housing areas

Compiled by Andrea Young.

Sources:

Byrne and Snipe, 2010; Kellet and Rofo, 2009; Bateman, Sarkissian, Young, 2012

In planning and designing open space in medium-density housing areas, it is advisable to assess the demographic, cultural and lifestyle preferences of the community (e.g., do children, older people or people from different cultures live here? Are residents seeking fitness, opportunities to socialise or solace?). Table 3 provides a summary of a suite of recreational, leisure and ecological functions of public open space suitable for residents living in medium-density housing areas (differentiated for both parks and plazas and commons). However, each open space is different and the functions listed should be selectively used to suit local needs. In planning and designing public open spaces to enable these functions, it is important to consider both the *qualities* of open space and the *user needs* discussed in this guideline.

Functions	Sub-functions	Park	Plazas and Commons
Access to Nature	Natural areas (trees, greenery, 'wild spaces')	✓	✓
	Quiet retreat spaces	✓	
Active recreation (structured)	Cycle paths	✓	✓
	Fitness circuits	✓	
	Skate ramps/BMX tracks	✓	
	Tennis practice wall, basketball/netball practice goals	✓	
Active recreation (Unstructured)	Ball kicking/throwing	✓	
	Walking trails	✓	✓
Amenities	Public toilets	✓	✓
Children's' play spaces	Pre-school children	✓	✓
	Older children	✓	✓
Community events	Produce market	✓	✓
	Community celebration/gathering/festivals	✓	✓
	Programmed activities (e.g., children's play)	✓	✓
Food production	Community garden	✓	✓
Dog exercising	Off-leash parks	✓	✓
	Walking trails	✓	✓
Meeting spaces	Seating (shaded and unshaded)	✓	✓
	Power outlets	✓	✓
	Picnic tables	✓	✓
	Water	✓	✓
	Barbeques	✓	
Sport	Sports courts/fields	✓	

Functions	Sub-functions	Park	Plazas and Commons
Teenagers' spaces	Meeting space functions	✓	✓
	Active recreation functions	✓	
	Active features (e.g., interactive public art)	✓	✓
Bio-diversity	Habitat conservation/restoration	✓	
Climate responsiveness	Ventilation and cooling of the neighbourhood	✓	✓
	Carbon sequestration	✓	

Table 3: Public Open Space Functions in Medium-density Housing Areas

Compiled by Andrea Young.

Sources: Redland City Council, 2011; Forsyth and Musacchio, 2005; UN Habitat, 2011

3.0 Qualities of Public Open Space

The basic qualities of successful spaces are that they are accessible, people are engaged in activities there, the space is comfortable, attractive and sociable, where can meet each other. They must also be safe spaces that invite use.

3.1 Qualities Applicable to all Public Open Spaces

General principles that make public open spaces 'people places' include the following:

1. Easily accessible and visible by potential users
2. Clearly convey that the space is intended to be used and the purpose of its intended use (with the potential for undesirable activities minimised)
3. Attractive and inviting from the outside and within
4. Provide furnishings, comfortable seating and other embellishments to encourage the desired activities
5. Designed to meet the needs of those most likely to use the space
6. Encourage use by different user groups at different times of day and night
7. Planned to accommodate diversity so that no one group disrupts another
8. Provide an environment which is comfortable
9. Accessible to children, older people and people with a disability
10. Provide opportunities for users to alter or personalise the space to meet their needs, as appropriate (e.g., ability to move chairs and tables)
11. Allow for attachment to and maintenance of the space by users (especially residents)
12. Able to be easily and economically maintained
13. Incorporate principles of ecologically sustainable design with minimal use of scarce or non-renewable resources
14. Allow for incorporation of public art and interaction with public art
15. Promote safety for all groups of users at all times

16. Design for use at different times of day and over different seasons
17. Programming of activities to encourage participation, activity and socialising and attachment to the space (e.g., children's play days, park restoration programs, adult fitness, community sporting events and events for young people).

3.2 Specific Qualities Applicable to Neighbourhood Parks

Neighbourhood parks need to accommodate a desire to be in a natural setting and the need for human contact. In addition to the general qualities described above, neighbourhood parks should offer:

1. Variety of activity (within and between parks)
2. A rich and varied environment for contact with Nature and convey a 'natural' appearance (via use of water, tree selection, natural settings)
3. Seating located appropriately for all users, with attention to microclimate
4. Opportunities for both socialising and watching passers by
5. Provision for those who come to the park with others (including picnic tables, flexible furniture arrangements), incorporating a relatively open layout to permit scanning for a friend or group and a circulation system that leads people past potential social contact areas without forcing them to stop
6. Good connectivity to the surroundings (visual and physical) and easy to pass through
7. Walking routes of different lengths to encourage walking by different people, including people with limited mobility
8. Diversified local habitat (e.g., retaining deadwood, snags and undergrowth)
9. Activity areas buffered by trees and other planting from polluted streets and setting back seating and playgrounds
10. Multiple entry/exit points to the park
11. Activity generators along the edge of parks or pedestrian routes (such as kiosks, chess board tables)
12. Engagement of the local community in the design, maintenance and care for the park).

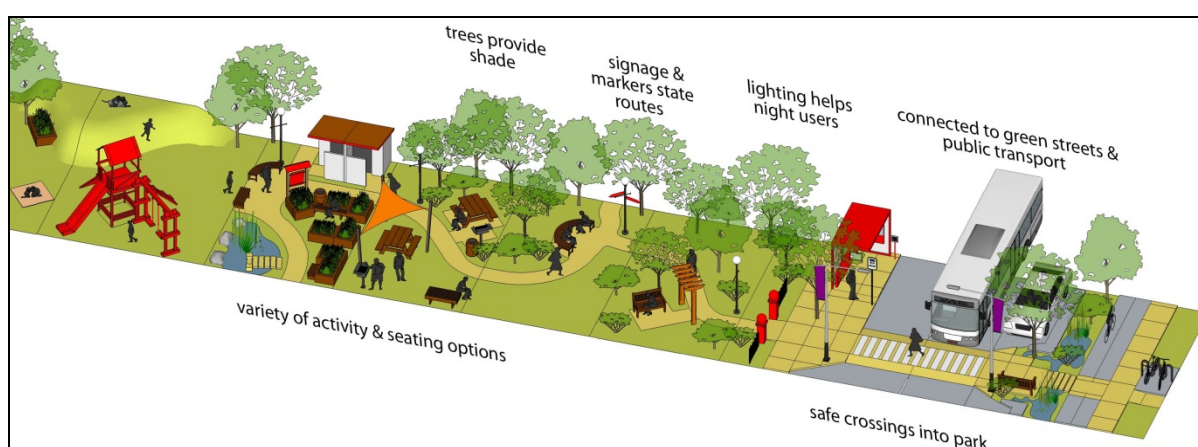


Figure 28: Neighbourhood parks provide variety and are well connected

Image: Brendan Hurley

3.3 Specific Qualities Applicable to Plazas and Commons

Plazas and commons are predominantly pedestrian areas where people come to sit, meet with friends, take in the activity around them or just to rest. These are places are destinations in themselves, not just a place to pass through. In addition to the general qualities described above, plazas and commons might include:

- A variety of forms, colours and textures, including smaller spaces within and different places to sit (subspaces offering different activities are particularly important in larger plazas)
- Communication of a clear purpose or function
- Free seating (the most important element to encourage use) in a variety of arrangements to support: conversation (seated people facing each other); looking outwards, refuge or sitting alone (no interaction); access to shade; seating with arm rests for older people (to support them standing); access to views; supervising children
- Attention to microclimate conditions and planning for year round use
- Planting and landscaping that promotes variety and interest, supports climatic comfort and cooling (spaces and adjacent buildings) and safety (CPTED considerations)
- Public art to foster interest, pleasure and communication, or encourage interaction (through climbing, touching, moving through) and support local artists
- Locating food vendors in accessible and visible locations
- Supporting civic uses (e.g., open-air concerts, community celebration, produce markets, rallies)
- Providing convenient and safe access to toilets, telephones, drinking fountains, rubbish bins and lockable storage areas (for chairs and other equipment)
- Designing a clear transition between the footpath and plaza
- Providing good connectivity with safe pedestrian routes
- Supporting well managed, non-discriminatory access to the space by all user groups, keeping the environment clean and promoting community events (such as concerts or exhibits), hanging posters or other signs to notify of coming events.

Programming of plazas and commons

Programming of plazas and commons is an important way to support intended programs or activities (e.g., outdoor events, exhibitions, produce markets and events for young people). Programming in plazas and commons can help build friendships, increase physical activity and increase the sense of identity and belonging in a medium-density community.

4.0 Needs of Specific Resident Groups in Medium-density Housing Areas

Table 4 summarises the specific needs for public open space of particular user groups in medium-density residential areas, signalling the need for their consideration in the planning and design of public open spaces.

Resident Characteristics	Behaviour or activity to be supported	Facilities, furnishing and programming
Households with children		
	Children's play: pre-schoolers	Shaded playground equipment, toilets and drinking fountain close to pre-school play area Lighting, especially near toilets
	Adult supervision of pre-schoolers' play	Comfortable, shaded seating nearby for caregivers with clear views of entire play area
	Play for children in middle childhood (6-12yrs)	Challenging play for older children (age six and over), such as slides and climbing walls and play with Nature
	Organised physical activity in groups	Structured activities (e.g., basketball hoop, tennis practice wall, football goals or team sports facilities where part of a larger park).
	Physical activity not in teams and not organised	Lawn area for running, throwing/kicking a ball around, separate from the team sports area
	Barbecuing and picnicking	Barbeque and picnic area close to play area
	Adults pushing children and infants in wheeled vehicles	Paths wide and level enough for prams and pushers
Teenagers		
	Teenagers: spaces to hang out 'and socialise with friends	Informal spaces for socialising with peers away from other activities or adult interference (e.g., natural spaces) Discrete spaces for sitting and meeting with friends (e.g., clustered seating, wide steps, benches picnic tables) Facilities to encourage physical activity (e.g., skate parks, basketball goals and practice courts, performance spaces)
Young adults without children		
	Casual social encounters near home and relaxed social activities	Expansive lawn area with some shaded areas for a variety of casual outdoor activities (sunbathing, sleeping, rolling down a hill, reading, picnicking, chatting, tossing a Frisbee) Paved areas for socialising, outdoor dining, sitting
	Entertainment for adults	Stage/amphitheatre for casual or programmed performances
	Picnicking, barbecuing and entraining by adults	Barbeque and picnic areas
	Adult exercise	Trails for walking/jogging/cycling and exercise circuit Tennis and/or other hard-surfaced courts
	Adult cycling	Bicycle parking with good visibility from all areas of the space
	Adult socialising in twos and threes	Benches and other seating arranged in conversational arrangements

Resident Characteristics	Behaviour or activity to be supported	Facilities, furnishing and programming
	Adult watching the world go by ('prospect' and 'refuge') Adults taking their problems to the park or plazas and commons	Seating off the path or circuit Allow spaces for people watching and for seeing and being seen: promenade space that may have spatial designs that are culturally and socially specific. Some cultures may have a tradition of using the public street or plaza, while others would prefer areas in the park Seating in solitary locations that are perceived as safe (e.g., some sightlines to more populated areas of parks, plazas or commons) Provide walking paths with different sensory experiences along the edges (using flowering trees and shrubs, paving) Along walking paths providing different sensory experiences and ecological function season-by-season
People with disability		
	Universal access	Continuous pathway into and within the public open space that does not incorporate any step, stairway or other impediment which would prevent it from being safely negotiated by people with disabilities Paths wide enough for two wheelchairs to pass, walking circuit with continuous handrail and tactile signals when coming to end of railing for visually impaired walkers. Tables and seating arrangements that can accommodate wheelchairs.
Older adults (singles/couples)		
	Unforced social encounters near home to combat isolation, shyness and loneliness	An entry plaza with nearby toilets, interesting and attractive vegetation and shaded and/or covered seating to facilitate socializing and to accommodate those who do not care to venture further into the public open space.
	Walking	A choice of walking paths through the space, clearly marked for easy wayfinding, with frequent opportunities for sitting. Safe, smooth walking route around perimeter of park, plaza or commons (e.g., a walking circuit), incorporating handrails for those who might need support for balance.
	Adult group recreation activities	Lawn area for activities such as bocce, lawn bowling and paved areas for chess or other activities, with shaded/covered perimeter seating.
	Socialising - picnics	Benches and other seating arranged in conversational arrangements. Barbeque and picnic areas.

Table 4: Public open space needs for specific resident groups in medium-density housing areas

Compiled by Andrea young

Sources: Clare Cooper Marcus, 2012 (unpublished); Kellet and Rofo, 2009

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