

Council of Mayors (SEQ)

Open Space and Medium-density Living Toolkit

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INTRODUCTION

The purpose of this *Toolkit* is to provide a range of statutory and non-statutory solutions (for inclusion in planning schemes) to address current and emerging issues for open space in medium-density development. This *Toolkit* provides guidance to help inform the integration of open space considerations in developing planning instruments for medium-density areas. It augments guidance provided in the *Next Generation Planning Handbook* (Council of Mayors (SEQ), 2011a) and the SEQ Place Model. Its focus is on integrating open space provision through development at the individual site level as well as through local area planning. The *Toolkit* is not intended to be an open space planning guide.

The *Toolkit* is intended for use by designers, developers and Local Government planners in site concept design and planning scheme preparation (including neighbourhood and local area plans).

Navigating the *Toolkit*

The *Toolkit* has the following parts:

PART A. Strategic Overview	Provides a general overview of the urban and planning context for providing open space to support medium-density living.
PART B. Guide for Planning Provisions	Guides the development of statutory provisions for open space within planning schemes associated with medium-density housing developments.
PART C. Guide for On-Site Open Space	Provides a (non-statutory) design guideline for the provision of on-site open space, including private and shared spaces.
PART D. Guide for Public Open Space	Describes the open space types, function, qualities and user needs specific to medium-density housing areas.
Abbreviations, Acronyms, Glossary and References	Abbreviations, acronyms, definition of terms used and list of references.

PART A. STRATEGIC OVERVIEW

1. 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 A-1**). 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 A-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 in this *Toolkit* 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).

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

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.

Form	Description	Role
Shared	<p>Shared (common) 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 to indoor community facilities (e.g., theatres, gymnasium and dining rooms).</p>	<ul style="list-style-type: none"> • Venue for neighbourly interaction, complementary to but distinct from the public life of parks and 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	<p>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 toNature, essential to human health.</p>	<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 toNature 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.
Plazas and Commons	<p>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.</p>	<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.

1.2. Context for Public Open Space in Medium-density Housing Areas

Planning for public open space is generally considered in terms of a hierarchy of spaces. It is also described by its functions (see **Table A-2**). The focus of this *Toolkit* is on public open space at the local area level, which, depending on the local circumstances, may include a combination of the different types of public open space below (other than regional parks).

Table A-2. Types of public open space

Classic Public Open Space Hierarchy	Functions of Open Space
Regional Parks Metropolitan Parks District Parks Local/Neighbourhood Parks Civic Spaces Small Open Spaces/Pocket Parks Linear Open Spaces	Recreation Function: <ul style="list-style-type: none"> • Passive and active recreation • Civic gathering/community events • Destination (unique values) Sports Function Ecological Function (e.g., access to Nature, flood management, bio-diversity, conservation) Linkage function (e.g., walking/cycling, ecological connectivity)

Sources: CABE Space (2009), ULDA (2011), Redland City Council (2011)

Local open space must provide a diversity of activities across a spectrum of passive, active and structured activity (e.g., quiet reflection, ball playing and sports), as well as a variety of landscapes (e.g., from natural to highly modified). While the focus of this *Toolkit* is on local open space, it is important to recognise that in local planning processes, increased populations in medium-density housing areas will also increase demand on sporting and recreational functions in the district and regional catchments.

Applying the urban typologies described in the *Next Generation Handbook*, this *Toolkit* addresses public open space provision within local areas characterised as the ‘urban neighbourhood’ and ‘centres of activity’ typologies identified (i.e. in the SEQ Place Model). The nature of open space in these typologies is described in **Figure A-1** and illustrated in **Figure A-2** and **Figure A-3**. Public open space in this context includes parks and plazas and commons (as described in **Table A-2** above).

Figure A-1. The context for public open space in medium-density areas

<p>Urban Neighbourhood (SEQ Place Model Typology):</p> <p>An interconnected park network offering a diversity of activity and experience</p> <p>Connected via shaded streets (green streets)</p> <p>Walkable, barrier free access</p> <p>Integrated paths for cycling and walking</p> <p>Predominance of greenspace</p> <p>Passive/informal recreation serving local catchment</p> <p>Formal sporting and recreation serving wider catchment</p> <p>Integrates ecological functions (water management, bio-diversity, cooling of urban areas)</p>	<p>Centres of Activity (SEQ Place Model Typology):</p> <p>Public realm provides frame for built environment and sense of place</p> <p>Collection of smaller public spaces (building setbacks, town square, laneways) with diversity of activity</p> <p>Connected by pedestrian-oriented public realm</p> <p>Connected to the open space network via shaded streets (green streets)</p> <p>Likely predominance of paved surface with some green space</p> <p>Integrated paths for cycling/walking</p> <p>Walkable, barrier free access to open space (parks) network</p> <p>Integrates ecological functions</p>
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The value of public open space can be enhanced by strengthening the connections between them (**Figure A-2** and **Figure A-3**). This will offer a greater diversity in open space experiences available to the community and increase levels of physical activity. Connectivity can be achieved through the use of green streets where priority is given to pedestrian circulation, cycling and green spaces. Treatments on green streets can include traffic calming, footpath widening, shade trees, grassing and other landscaping and seating). Connectivity between public open spaces can also be achieved through the use of linear parks. A green street network will enhance connectivity with other local destinations such as shopping centres, schools and public transport stops.

Figure A-2. Urban neighbourhood public open space network

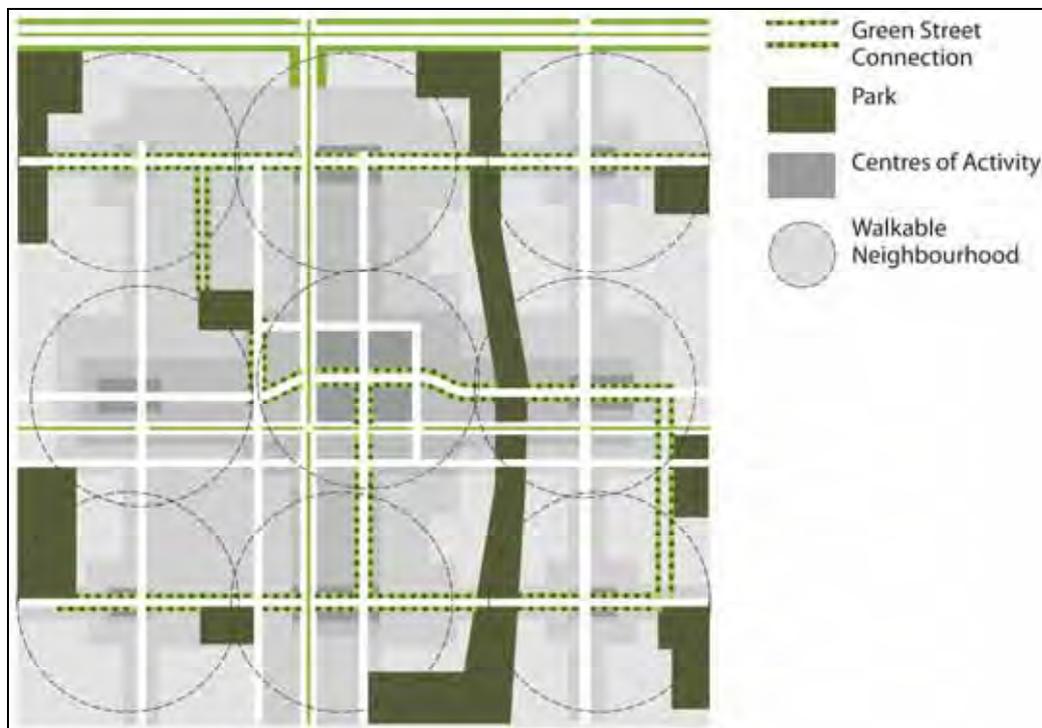


Image credit: Brendan Hurley (after Council of Mayors (SEQ), 2011a)

Figure A-3: Centre of activity public open space network



Image credit: Brendan Hurley (after Council of Mayors (SEQ), 2011a)

2. Planning for Public Open Space

Preparing an open space strategy (**Figure A-4**) can facilitate high quality open space outcomes in medium-density housing areas, ensuring these outcomes are integrated with land development planning (CABE Space, 2009; Sarkissian *et al.*, 2012). In medium-density housing areas, a needs-based approach to open space planning which considers the type, quality, diversity and amount of open space, is essential to understanding the particular qualities and role of open space in medium-density areas (see to *Part D. Guide for Public Open Space*).

Figure A-4. Scope of an open space strategy

An open space strategy can address a local area or wider (e.g., the whole of a local government area). Typically it:

- Adopts a needs-based approach taking into account population size and characteristics (such as age, household type, cultural diversity, gender), along with the application of quantitative standards
- Audits the quantity, quality and diversity of existing open space
- Develops a vision and objectives for open space
- Assesses the needs of existing and future population
- Evaluates the capacity of existing open spaces to meet their needs and identify gaps (i.e. for local, district and regional spaces)
- Creates a strategy for:
 - protecting existing valued spaces (e.g., spaces with natural values such as biodiversity)

- identifying priorities for addressing deficiencies in existing open spaces (through redevelopment and/or embellishments)
- identifying sites for new open spaces
- identifying links between open spaces (green streets)
- providing the basis for Desired Standards of Service for infrastructure contributions charged under a Council's Priority Infrastructure Plan.

Community engagement in the development and implementation of an open space strategy is the key to effectively addressing community aspirations and needs and to encourage local ownership of parks and other public spaces.

Ideally, planning for public open space should occur as part of the plan making process for land development. In this way, it can inform the preparation of a planning scheme, local area plan, master plan and Priority Infrastructure Plan (PIP). **Figure A-5** outlines how inputs from open space planning can inform the land plan making process.

Figure A-5. Integrating open space planning with South East Queensland's development planning framework

Background Planning Study

When selecting areas for medium-density housing the following considerations about open space are relevant:

- Capacity of existing open space to absorb increased demand and/or opportunity to secure additional space
- Accessibility to open space (e.g., avoiding barriers such as rail lines, major roads, steep inclines)
- Opportunity to improve the quality and diversity of existing open space to meet community needs
- Support place making by using open space and green streets as a 'green frame' for the urban form and to enhance the public realm

Statutory Planning Instruments

An Open Space Strategy can support the preparation of:

- A local area (neighbourhood) plan or planning scheme, by including:
 - Performance outcome statements incorporating the role and function for open space (reflecting the vision, objectives and strategies for open space)
 - Suitable locations for zoning medium-density housing
 - The location and role of open space and green streets
 - How built form and land use should respond to open space (e.g., CPTED considerations)
 - Integration with pedestrian/cycle network planning and water sensitive urban design
- Planning codes for areas, uses and subdivision (reconfiguration of a lot) by informing:
 - Site specific requirements (e.g., location, role and function) for open space and green streets
 - Requirements for development on sites adjacent to open space and green streets (e.g., natural surveillance, land use compatibility)
 - Requirements for integration with pedestrian/cycle network planning and water sensitive urban design
- Structure plan/master planning for larger developments by informing:
 - The assessment of open space needs (e.g., quantity, type, function and timing)
 - Site specific location and development intents for individual open spaces and green streets

- Embellishments for new or existing open space and green streets
- Considerations for possible contributions beyond those specified in the PIP to meet identified needs (as conditions or approval and/or voluntary Infrastructure Agreements)

- Priority Infrastructure Plan (PIP):

Desired Standards of Service establish the quantity, type, function and embellishments for open space in the planning area and form the basis for assessing needs to support the planned population. These needs are expressed in the PIP as Plans for Trunk Infrastructure¹ and can include the need for:

- Additional open space (amount and function)
- Improvements to existing open space
- Embellishments for new and/or existing open space

(Non-Statutory) Operational Plan

An Open Space Strategy can inform:

- Priorities for purchasing land and land assembly strategies, park development and/or park upgrades
- Priorities for site specific park master planning
- Site specific park programming and management

¹ Plans for Trunk Infrastructure identify the existing and planned trunk infrastructure networks intended to service urban development and amongst other things provide a benchmark to assess and condition development applications (section 649 of the SPA). (Queensland Government, Undated. *PIP Practice Note 3. Plans for Trunk Infrastructure*. Published: Queensland Government: Brisbane.)

PART B. GUIDE FOR STATUTORY PLANNING PROVISIONS

1. Introduction

This guideline suggests indicative planning provisions for open space to support medium-density housing areas. In doing so, it is acknowledged that different planning contexts will apply across Local Government areas and localities. The guideline should be interpreted in the relevant local context.

The guideline adopts a format and terms consistent with the Queensland Planning Provisions (Version 3) and addresses the following urban typologies (defined in the *Next Generation Handbook*, Council of Mayors (SEQ), 2011a) for:

- *Urban Neighbourhood*: described as higher density walkable, mixed-use neighbourhoods. They may be older suburbs closer to centres or parts of new communities that are planned to achieve this outcome. Urban neighbourhoods have good public transport access. While they include detached houses, these neighbourhoods are typically medium- to higher density and are often transit-oriented. The typical density is at least 30 dwellings per hectare.
- *Centres of Activity*: described as mixed-use areas including non-residential (e.g., shops, offices, higher education and entertainment) and medium and higher density housing. They are surrounded by and connected to Urban Neighbourhoods (and Next Generation Suburban Neighbourhoods), but are not CBDs.

To maximise congruency between overall planning outcomes, considerations for open space outcomes should be integrated with other planning considerations including built form (e.g., site cover, setbacks and building height), landscaping, car parking, water-sensitive urban design (WSUD) and site servicing.

2. Indicative Provisions for Open Space in Medium-density Housing Areas

2.1. Overall outcome or purpose statement

The overall outcome or purpose statement should establish expectations for development to support convenient and safe access to on-site and public open space and to enhance the capacity of open space to:

- Meet the recreation and health needs of a diversity of residents at different stages of their life cycle
- Facilitate neighbourhood identity and social interaction
- Promote access to greenery
- Facilitate climate responsive urban design
- Enhance its ecological functions.

It should also give primacy to the role of open space (both on-site and public) in helping to achieve these outcomes.

2.2. Indicative Provisions for Public Open Space

The considerations in **Table B-1** are intended for consideration in preparing planning instruments intended to regulate master planning and subdivision (reconfiguration of a lot) and are most relevant to larger developments (such as major infill sites or master planned greenfield developments). They are supported by further guidance in *Part D. Guide for Public Open Space*.

Table B-1. Indicative provisions for public open space

INDICATIVE PERFORMANCE OUTCOMES	ADVISORY NOTES/INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
<p>Increased demand: Development contributes to the provision of public open space to meet the needs of the increased population.</p>	<ul style="list-style-type: none"> Public open space is provided as per the requirements of the relevant Local Government’s Local Area Plan and/or Priority Infrastructure Plan. Where a large infill development is not anticipated in an existing planning instrument (e.g., local area plan), open space needs associated with the development should be investigated as part of a social impact assessment conducted for the site. Enhancements to the existing public open space network could be achieved through: <ul style="list-style-type: none"> Provision of additional park space, OR Embellishments where there is good access to a park, but where the park has low value in meeting the functional needs of a diversity of residents (see <i>Part D. Guide for Public Open Space</i>). 	<p>Nil</p> <ul style="list-style-type: none"> Where there is limited capacity to create additional park area, novel public open space can be provided (e.g., plazas and commons, including green roofs) where these spaces can be augmented by the following: <ul style="list-style-type: none"> A park is within 500m or a 5-minute walk via a convenient, attractive, level and safe route that is free of barriers (e.g., major roads, steep inclines). That park forms part of a local park network that supports a diversity of activities and functions. <p>Nil</p>
<p>Convenient, accessible and well-designed: Development contributes to providing residents with convenient, walkable and safe access to a network of well-designed public open spaces. Public open space design supports social inclusion and safety, is inviting to users</p>	<ul style="list-style-type: none"> The park is within 500m or a 5-minute walk via a convenient and safe route that is free of barriers (e.g., major roads, steep inclines). Park land is suitable for its intended use, (e.g., is 	<ul style="list-style-type: none"> Public open space provided in the form of plazas and commons is accessible within 300m via a convenient and safe pedestrian route that is free of barriers (e.g., major roads, steep inclines). Public open space provided as plazas and commons offers

INDICATIVE PERFORMANCE OUTCOMES	ADVISORY NOTES/INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
and supports a diversity of activities relevant to the needs of the local community.	<p>unconstrained by leases, is of adequate size and in a suitable location).</p> <ul style="list-style-type: none"> The design of public open space conveys that the space is an interesting, socially inclusive, comfortable and safe place to use. Design supports year round use by different user groups and use at different times of day (see <i>Part D. Guide for Public Open Space</i>). 	<p>unrestricted public access (e.g., not constrained by exclusionary management practices) and supports cost-free use (e.g., such as public tables and seating).</p> <p>Nil</p>
<p>Diversity of functions: The provision of public open space supports a diversity of activities and functions in the local open space network. In a medium-density community, diversity includes: catering for a range of users and outdoor activities (in particular for children, teenagers, older people and pet owners); facilitating contact with Nature (important to general population health and early childhood development); and supporting ecological functions such as relief from urban heat, bio-diversity, water sensitive urban design, food production and carbon sequestration.</p>	<ul style="list-style-type: none"> Within the local public open space network, park design and embellishments contribute to a diversity of activities and functions relevant to the needs of the local community, including ecological functions. (see <i>Part D. Guide for Public Open Space</i>). The park is predominantly developed as a green space (i.e. it is treed, grassed or otherwise landscaped); paved surfaces are kept to a minimum (balance could be specified in Council's PIP or Open Space Strategy). 	<p>Nil</p> <ul style="list-style-type: none"> The plazas and commons can be developed as a predominantly paved area, with the inclusion of small green spaces and shade trees to provide relief from heat and contact with and views of greenery.
<p>Public open space interface: Land use activities adjoining public open spaces are compatible with the intended function of the open space and confer safety on the space.</p>	<ul style="list-style-type: none"> Land use activity adjacent to the public open space does not restrict the use of the space for its intended purpose. Activities within public open spaces are located to minimise disturbance to neighbouring land uses (e.g., noise and lighting) Medium-density housing adjacent to public open space provides direct and convenient access into the space and clearly distinguishes spaces that are intended for private use only (especially at residential edges) 	<p>Nil</p> <p>Nil</p>

INDICATIVE PERFORMANCE OUTCOMES	ADVISORY NOTES/INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
	<ul style="list-style-type: none"> Development adjacent to parks promotes natural surveillance into parks to confer safety on users. 	<ul style="list-style-type: none"> Land use activity adjacent to an plazas and commons should contribute to activating the edges of the space and provide natural surveillance over the space.

2.3. Indicative Provisions for On-Site Open Space

The considerations in **Table B-2** are intended to inform planning instruments regulating medium-density housing. They are supported by detailed design guidance provided in *Part C. Guide for On-Site Open Space*.

Table B-2. Indicative provisions for on-site open space

INDICATIVE PERFORMANCE OUTCOMES	INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
GENERAL ⁽¹⁾		
<p>1. General Site Design: overall site design supports the primary role of on-site open space in providing residents with the opportunity for neighbourly interaction, outdoor activity within the home environment, access to greenery and climate control (ventilation and cooling). On-site open space is capable of meeting the changing life-cycle needs of a diversity of residents and their changing needs over time.</p>	<ul style="list-style-type: none"> Site planning and design achieves the following qualities for on-site open space (private and shared): <ul style="list-style-type: none"> Meets the needs of different user groups, including changing needs over time (including children and older people) Design for climate including access to shade and sunlight and ventilation and cooling Access to Nature – trees, shrubs or grass as appropriate Wayfinding (site design makes sense to residents and outsiders) Safety (including clearly delineated shared and private spaces, well defined and visible entrance, overlooking of the space and ease of wayfinding through the site) Universal design (barrier-free) providing a continuous accessible path of travel from the on-site space to 	Nil

INDICATIVE PERFORMANCE OUTCOMES	INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
	<p>the accessible entrance of the buildings it serves</p> <ul style="list-style-type: none"> - Use and enjoyment of open space without impinging on dwelling privacy or amenity. • Site servicing functions (e.g., refuse storage, recycling, clotheslines, water storage) do not form part of the on-site open space. <p>(See Part C. Guide for On-Site Open Space)</p>	

INDICATIVE PERFORMANCE OUTCOMES	INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
PRIVATE OPEN SPACE⁽²⁾		
<p>General characteristics and qualities:</p> <p>2. Development provides private open space that is well proportioned, appealing and functional and promotes outdoor living as an extension of the dwelling. The proportions of the space support it being furnished with an outdoor dining setting (without intrusion from an air-conditioning unit).</p> <p>3. The private open space is sufficiently flexible and appealing to meet the needs of a diversity of residents (including adult households with children and teenagers, older people and people with a disability)</p>	<p>Ground-level dwellings:</p> <ul style="list-style-type: none"> • Directly accessible from main living area • Minimum dimension: typically in a range of 3-4m (one minimum dimension of 3.7m to allow for gardening, entertaining, clothes drying) • Minimum area: typically 25-35m² <p>Above ground dwellings:</p> <ul style="list-style-type: none"> • Directly accessible from main living area • Minimum dimension: typically 3m • Minimum area: typically in a range of 9-12m² <p><u>General:</u> Development supports:</p> <ul style="list-style-type: none"> • Outdoor open space that is sufficiently flexible to support the needs of different users over the lifetime of the premises (including children and older people), such as: <ul style="list-style-type: none"> - Outdoor dining - Gardening - Children's play 	Nil

INDICATIVE PERFORMANCE OUTCOMES	INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
	<ul style="list-style-type: none"> - Relaxation • Dwelling aspect, orientation and design to achieve: <ul style="list-style-type: none"> - solar access (optimum orientation for private open space is to the north) - ventilation of the private open space and dwelling (and protection from updrafts) • Clear definition of ownership ('territorial definition') to indicate that the open space is a private space and not intended for use by others • Respecting privacy while still allowing views out • Convenient access to the shared open space • Be safe and apply CPTED principles, including well defined sense of ownership of the space (territoriality) and security (i.e. no features such as 'natural ladders' to facilitate illicit access to balconies). <p>(See Part C. Guide for On-Site Open Space)</p>	
SHARED OPEN SPACE		
<p>General characteristics and qualities:</p> <p>4. Shared open space is designed to:</p> <ul style="list-style-type: none"> • Support outdoor activity within the home environment (e.g., relaxing, children's play, gardening, quiet retreat, socialising) • Provide opportunities for unforced neighbourly interaction in the home environment (complementary to but distinct from the public life of public open space) • Provide access to greenery (including views) to support relaxation, health and early childhood development (through contact with Nature) • Contribute to ventilation and cooling of the premises and 	<p>Minimum area: typically in a range of 20-30% of site.</p> <ul style="list-style-type: none"> • Outdoor space dimensions and distribution: <ul style="list-style-type: none"> - Minimum dimension: typically in a range of 5-10m - A balance of paved and soft landscape (such as grass, shade tree, other natural landscape) - More than one shared space in larger developments <p>The amount of shared open space provided on site could be reduced where:</p> <ul style="list-style-type: none"> • The development is directly adjacent to a public park which can be safely and easily accessed from the 	<p>Additional provision for 'Outdoor space dimensions and distribution':</p> <ul style="list-style-type: none"> • Outdoor space can be provided as rooftop or uncovered balcony. Provision at ground level is preferred but there may be some contexts involving commercial ground floor uses where this maybe difficult to achieve.

INDICATIVE PERFORMANCE OUTCOMES	INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
<p>dwelling</p> <ul style="list-style-type: none"> • Relate to the dwellings it serves • Provide a choice of outdoor spaces and/or activity in larger developments. • Shared open space is not inter-changeable with an indoor facility (e.g., a gymnasium or community room, although indoor facilities play a useful role in meeting other recreational needs of residents, particularly in larger developments) 	<ul style="list-style-type: none"> • development and where the dwellings have a direct visual association with the park. • If the site has groups of dwellings without visual association with the park, ensure that there is a clear and easy pedestrian route leading from these dwellings to the park. • Where the park has the capacity to absorb increased use by the likely residents • Where the park offers a range of activities to meet the diverse needs of residents. <p>(See Part C. Guide for On-Site Open Space)</p>	
<p>Characteristics and qualities for specific uses and users:</p> <p>5. Shared open space caters for different user needs, is socially inclusive and is capable of being adapted to meet the changing life cycle needs of residents over time (including children and older people).</p>	<ul style="list-style-type: none"> • Shared open space supports a diversity of functions relevant to the needs of different residents over the lifetime of the premises (including children and older people), such as: <ul style="list-style-type: none"> - Adult socialising - Children’s play - Teen’s social and recreation activities - Relaxing, sitting - Solitary reflection and retreat - Active recreation (e.g., strolling, ball play) - Gardening • Fixed outdoor facilities such as swimming pools and tennis courts are appropriate where they do not restrict the use of shared open space for other outdoor activities. • Some areas of shared open space may include ‘deep planting’ where larger trees can be planted while still maintaining the functions of shared open space elsewhere on the site. This is normally encouraged (or specified in codes) at the front or rear of a 	

INDICATIVE PERFORMANCE OUTCOMES	INDICATIVE ACCEPTABLE SOLUTIONS	
	Urban Neighbourhood	Variation for Centres of Activity
	<p>site (depending on the site design or open space strategy in the locality). These areas may also provide zones for a small amount of groundwater recharging.</p> <p>(See Part C. Guide for On-Site Open Space)</p>	

(1) Notations for on-site open space provisions- General:

1. *Functional open space should be provided even where a range of site planning demands need to be balanced (such as stormwater detention and storage, vehicle movement and servicing).*
2. *Division 3, S180 (7) of the Queensland Body Corporate and Community Management Act, 1997, states that: 'A by-law must not be oppressive or unreasonable, having regard to the interests of all owners and occupiers of lots included in the scheme and the use of the common property for the scheme.' In granting development approval for strata and community titled developments, Councils should include a condition of approval along the following lines: 'The body corporate rules applying to the development must include a by-law that enshrines the right of children to play in all shared (common) spaces that are safe and the rights of residents to keep pets, in accordance with Council's by-laws specification. (Additional note: Councils may need to develop a special by-law for pets in a strata title setting if one does not already exist.)'*
3. *Podium and roof top open space provision may provide a viable opportunity for some forms of private or shared open space, particularly where ground floor space is keenly contested for the pedestrian entry or lobby, provision of ground floor retail (e.g., in commercial or mixed-use areas), service areas, vehicle driveways and water storage or treatment.*

(2) Notations for on-site open space provisions - Private and Shared Open Space

4. *The standards indicated here are based on typical ranges in planning schemes in SEQ.*
5. *Shared open space area (often expressed as a percentage of the site) will vary as a result of the different building forms and intensities from place to place and Council area to Council area. For example shared open space in a 'three-storey walk up' building is likely to be different to a podium and tower building form common in Centres of Activity.*
6. *Individual Councils will need to test the size and utility of shared open space in a range of building forms and densities, to determine locally appropriate standards for its provision.*
7. *Post-Occupancy Evaluation of resident satisfaction with shared open space and benchmarking for a range of building types and development intensities.*

PART C. GUIDE FOR ON-SITE OPEN SPACE

This guideline addresses 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

Material for this Part has been drawn from the following key 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.

Readers are referred to the References for a full list of sources.

1. 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 are the 'front-end' design matters that should be considered at the beginning of the planning and design process.

Figure C-1. On-site open space serving medium-density housing



Image credit: Brendan Hurley

Design elements illustrated in **Figure C-1** relevant to this section 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:

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- 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 (both private and shared):

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 C-2. A simple legible layout where entry to a group of dwellings is facilitated by a path with clear signage and direction



Image credit: 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 that help 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 C-3. Territory and fencing - this fence was added after residents moved in to overcome territorial ambiguity



Image credit: 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 C-4. Pedestrian access and traffic management

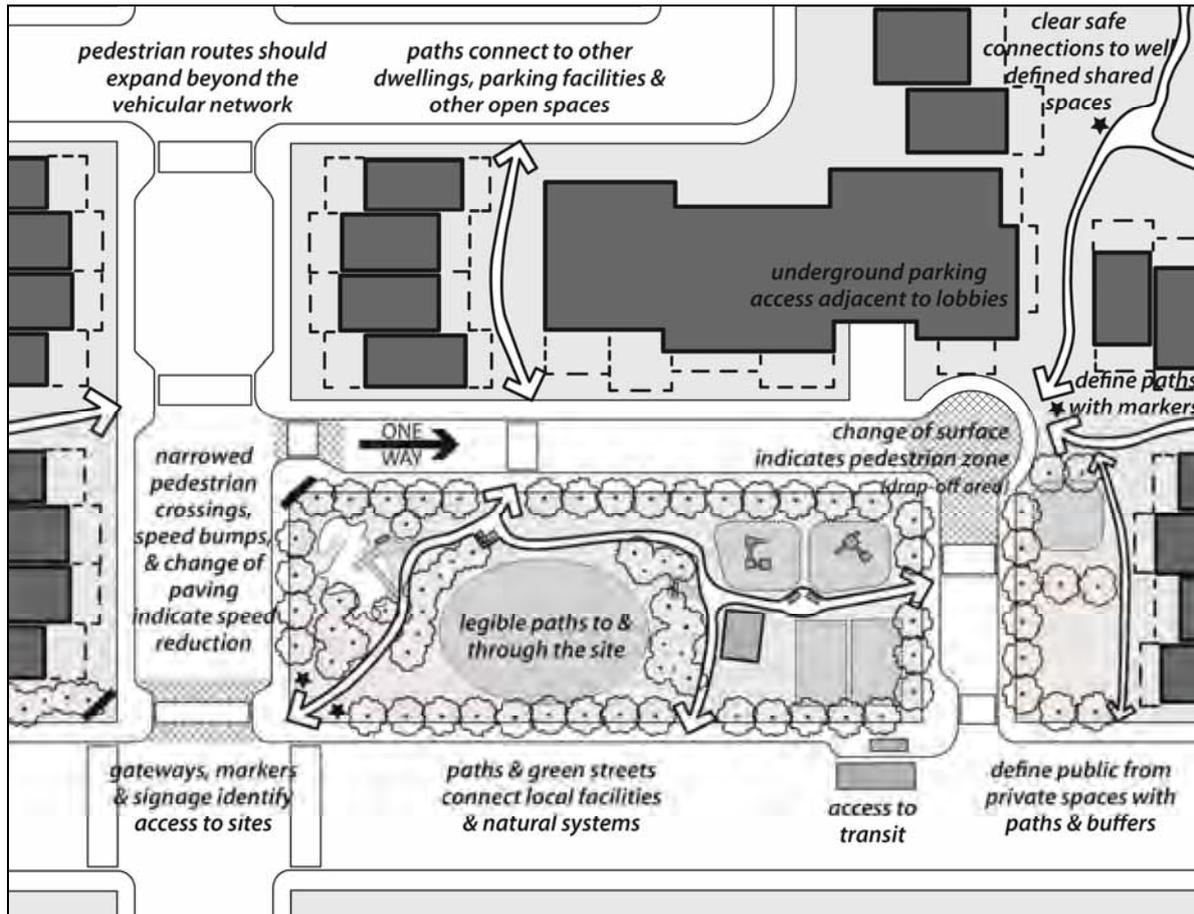


Image credit: Brendan Hurley and Wendy Sarkissian

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 C-5** below shows some of the components of CPTED which apply to open space.

Figure C-5. CPTED principles applicable to on-site open space

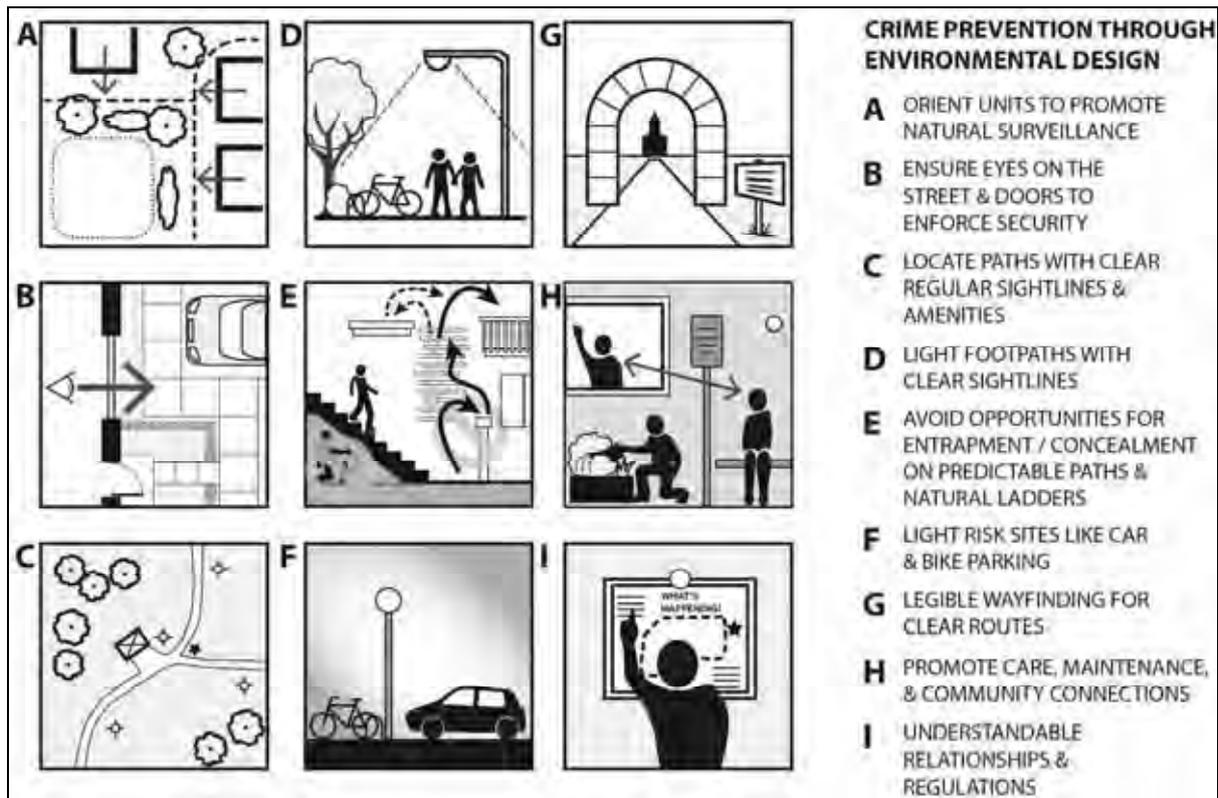


Image credit: Brendan Hurley and Wendy Sarkissian

Strategies that can be used in planning and designing on-site open space include¹:

- Employing real or symbolic barriers to help discourage intrusion by strangers into communal landscaped spaces intended for use by residents only
- Treating the external boundaries with care to allow permeability without having outsiders intruding into private or shared residential territories
- Eliminating 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, ensuring 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

¹ More detailed CPTED guidelines related to shared open space are in Section 3.3.F

Figure C-6: Use landscaping to buffer and delineate shared and private open spaces



Image credit: Wendy Sarkissian

- Clearly delineating 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
- Dividing 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
- Providing at least a visual buffer between shared and private spaces
- Using gates and fences to control side and rear access
- Ensuring that there is clarity of entry and exits into the site
- Avoiding ambiguous land use and make sure that the whole design communicates the clarity of purpose of any space.
- Aiming to achieve centralisation of night-time activities to enable supervision
- Eliminating predictable routes and potential entrapment and concealment locations from the design wherever possible
- Particularly in high-crime areas, designing paths through a residential development to allow pre-scanning by the user before use
- Orienting buildings to overlook shared open space
- Using plant selection that supports 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)
- Social crime-prevention strategies should also be considered in addition to design strategies to prevent crime, though techniques such as community engagement, community capacity building and neighbourhood social events to strengthen community development (consistent with Second Generation CPTED approaches)

Further information on CPTED can be sought from 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 C-7**). Strategies include:

- Ensuring that on-site open space supports cooling of the site and contributes to enhancing the energy efficiency of dwellings
- Locating, orienting and landscaping open space to support winter sun penetration and summer cooling to both open space and the buildings
- Minimising the use of hard surfaces
- Providing a northerly aspect for living areas, courtyards and balconies to permit summer sun to enter dwellings
- Orienting for maximum ventilation
- Providing artificial shade structures in shared open space to allow outdoor living during hot seasons and protect from summer storms

Figure C-7. Climate-responsive design

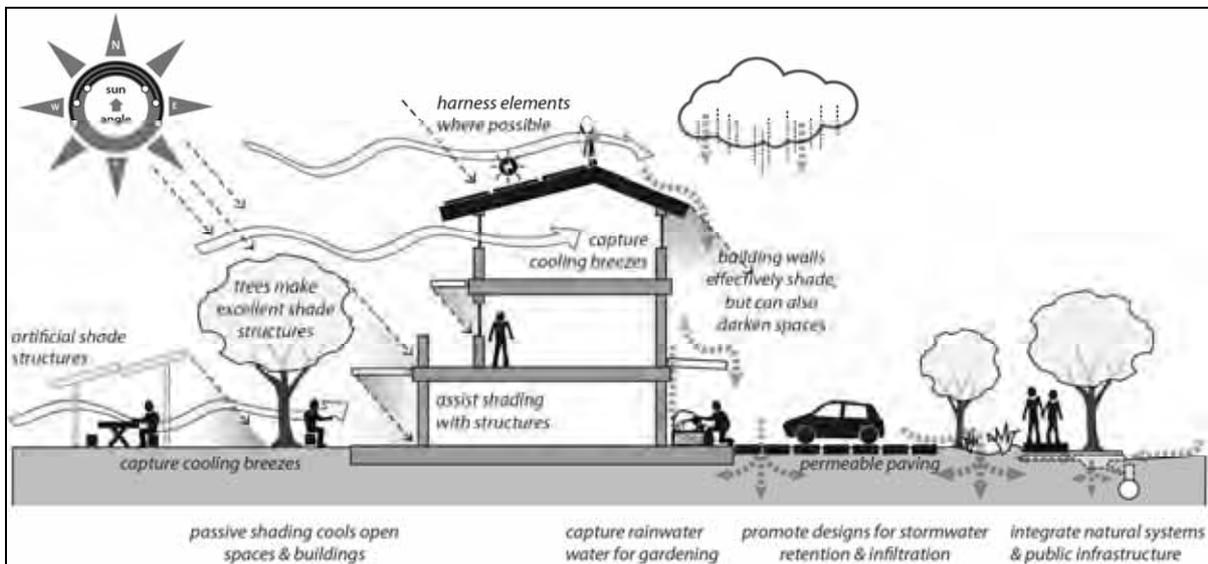


Image credit: Brendan Hurley

2. 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 also important to provide for flexibility as household composition changes. Some specific needs of different resident groups are detailed below. These can apply to all on-site open space, but are of particular concern in on-site shared open space (Section 4).

2.1. Children

The key issues in designing medium-density residential environments for children is to 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
- Ensure that small children can be contained in a yard and observed from a dwelling's work areas (e.g., kitchen or study/office)
- Ensure that private open space is of reasonable shape to accommodate at least some play equipment
- 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

Figure C-8. Children’s play in shared open space

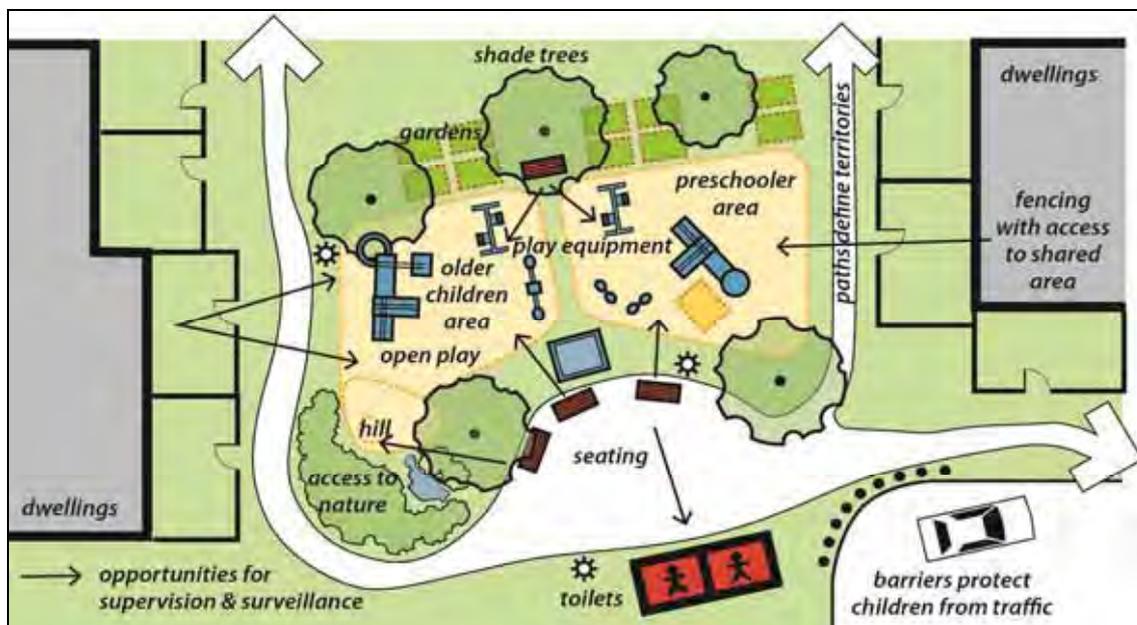


Image credit: Brendan Hurley and Wendy Sarkissian

Figure C-9. This grassed area could have been designed for children's play



Image credit: Griffith University

2.2. Teenagers

It is essential to provide opportunities for teenagers to 'hang out' in places where their activities do not cause difficulties for others using shared open space or to neighbouring residents. Designing spaces so that they:

- 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 places for activities requiring skill and places to work out physically
- 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
- 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
- Locate a litter bin nearby
- Install unbreakable lighting fixtures near places that teenagers may use
- Make sure all areas likely to be used by teenagers are well buffered from nearby dwellings
- Locate windowless walls adjacent to hard-surfaced and other recreation areas
- Provide privacy planting and fencing
- Locate paths so that they do not pass through areas dominated by teenagers
- Provide separate areas for teenagers' recreation from parking areas

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- Where feasible, involve teenagers in the process of designing and constructing recreation areas for their use to maximise ownership and care of facilities

2.3. 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 C-10: Cut-out fencing balances privacy and surveillance



Image credit: Griffith University

2.4. People with disability

People with a 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

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- 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

For children with a disability:

- 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 10m in length, with intermediate platforms not shorter than 1m and stopping and turning platforms not smaller than 1.6m on each side
- Pay particular attention to the design of handrails, ensuring that they extend approximately 300mm beyond the top and bottom of the ramp support and parallel to the floor, with 20mm free space between handrail and wall if rail is to be grasped. On steps, providing two handrails so that the lower handrail can be used by children
- 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 0.5m at both ends and a wheel guard at the end of the ramp (see AS 1428: Design for Mobility)

2.5. 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 C-11**)
- 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 C-11. A personalised entry that creates a sense of individuality

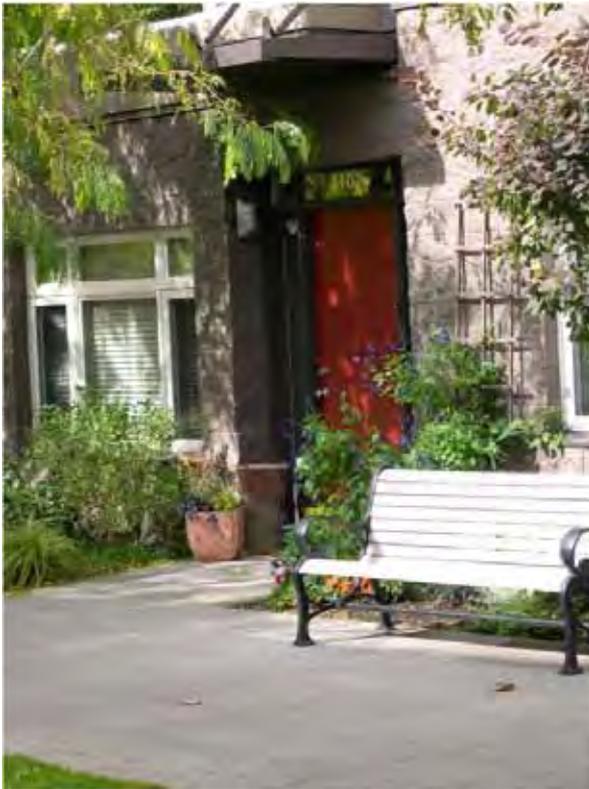


Image credit: Wendy Sarkissian

3. 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 C-12. Private open space: general site overview



Image credit: Brendan Hurley

The design elements of **Figure C-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 C-13. Private courtyards need privacy from shared open space



Image credit: Wendy Sarkissian

Figure C-14. Paths too close to dwelling windows



Image credit: 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 C-15. Backyard and front door play

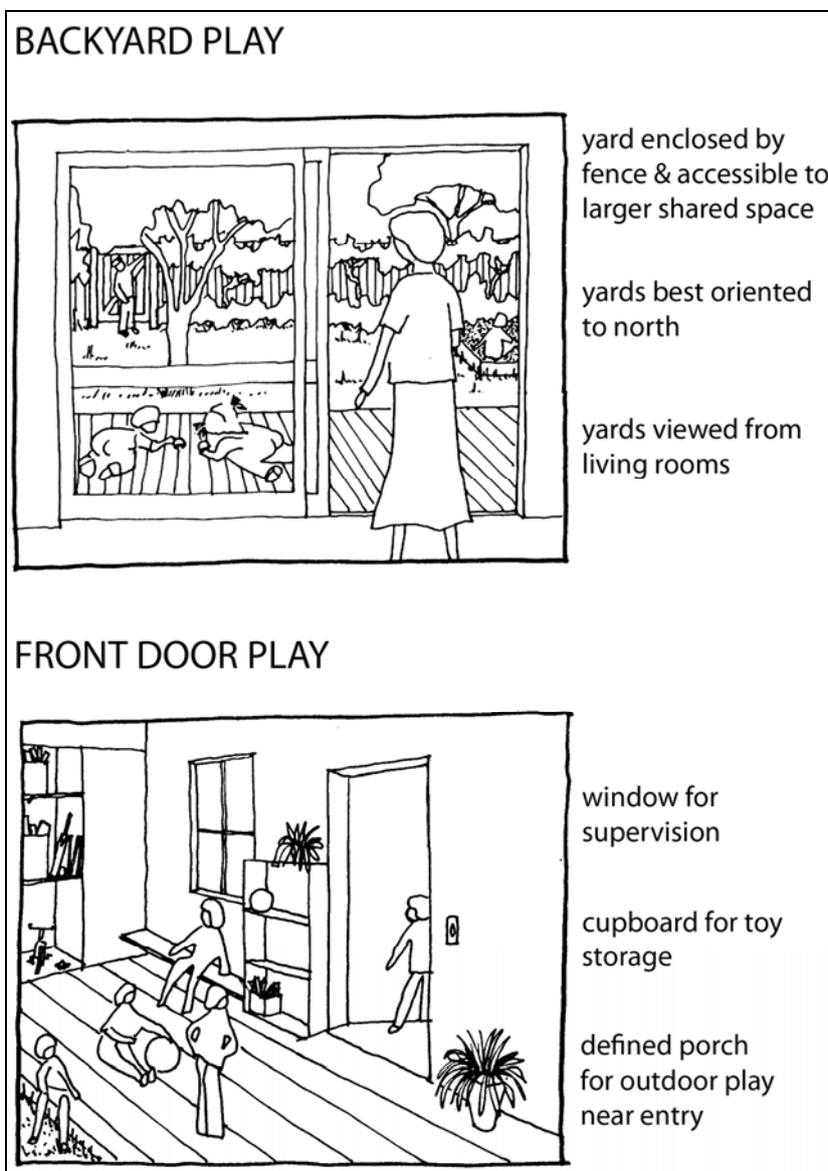


Image credit: Kevin Taylor (after Cooper Marcus and Sarkissian, 1986)

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



Image credit: 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 C-17. 'Natural ladders' diminish the security of balconies



Image credit: Griffith University

- 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 C-18. Balconies and decks

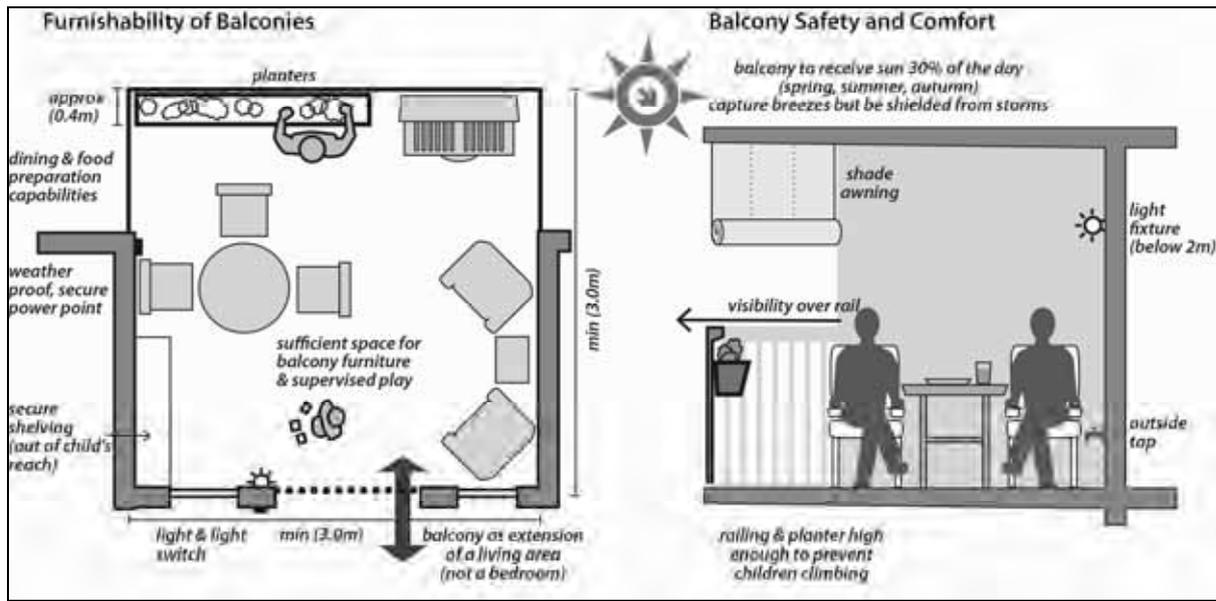


Image credit: Brendan Hurley and Wendy Sarkissian

- 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. 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 C-19. Shared open space: general site overview



Image credit: Brendan Hurley

Design elements illustrated in **Figure C-19** relevant to this section 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. Ensure that 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 C-20. Territorial definition for shared open space

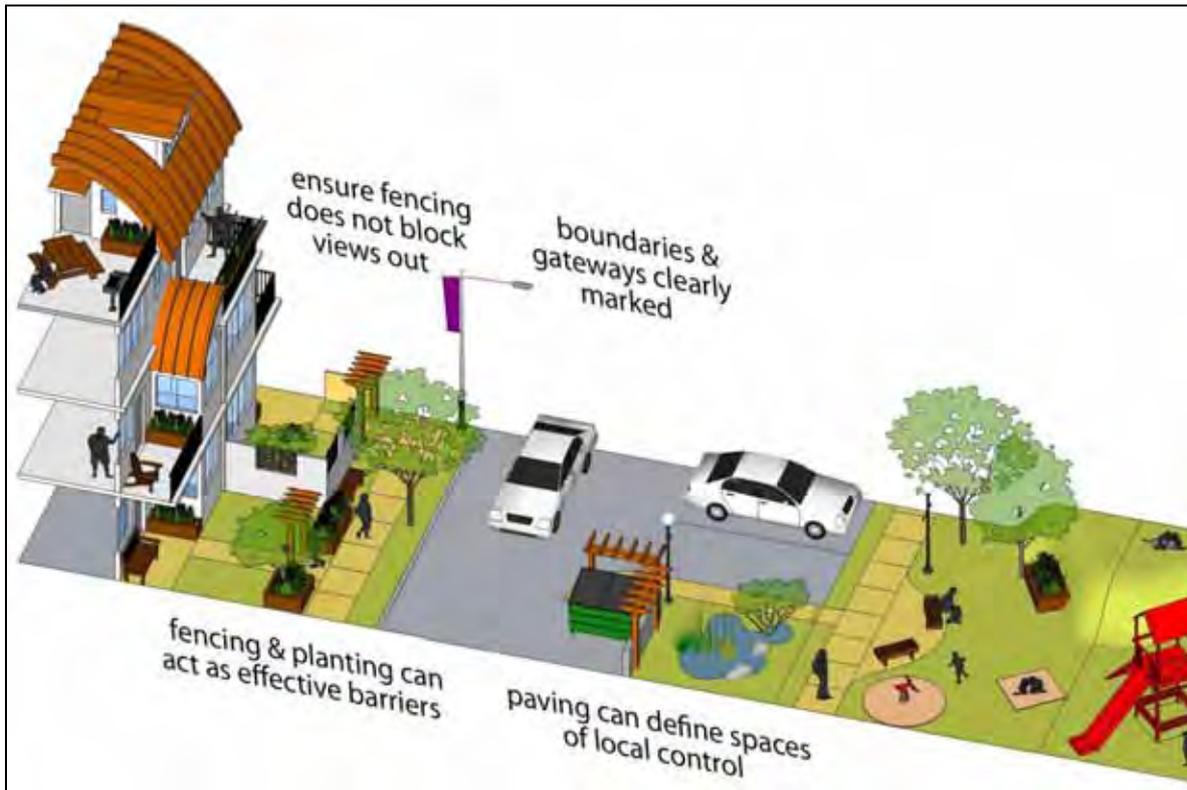


Image credit: Brendan Hurley

Figure C-21. Surveillance of shared open space

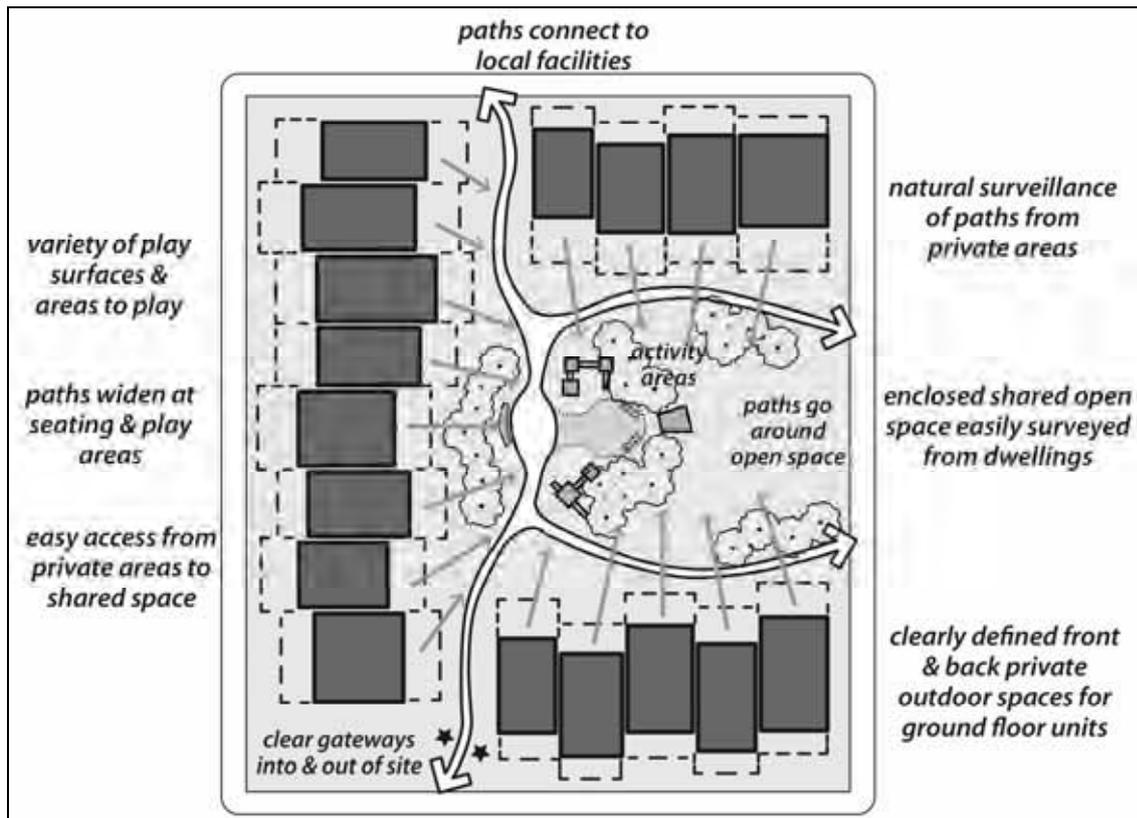


Image credit: Brendan Hurley and Wendy Sarkissian

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 considerations below should be read in conjunction with considerations for specific users in **Section 2**.

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 (see 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 (see Australian Standard 1428.2)
- Provide a range of seating options, located to avoid extremes of sun and wind.

Figure C-22: Seating and wayfinding

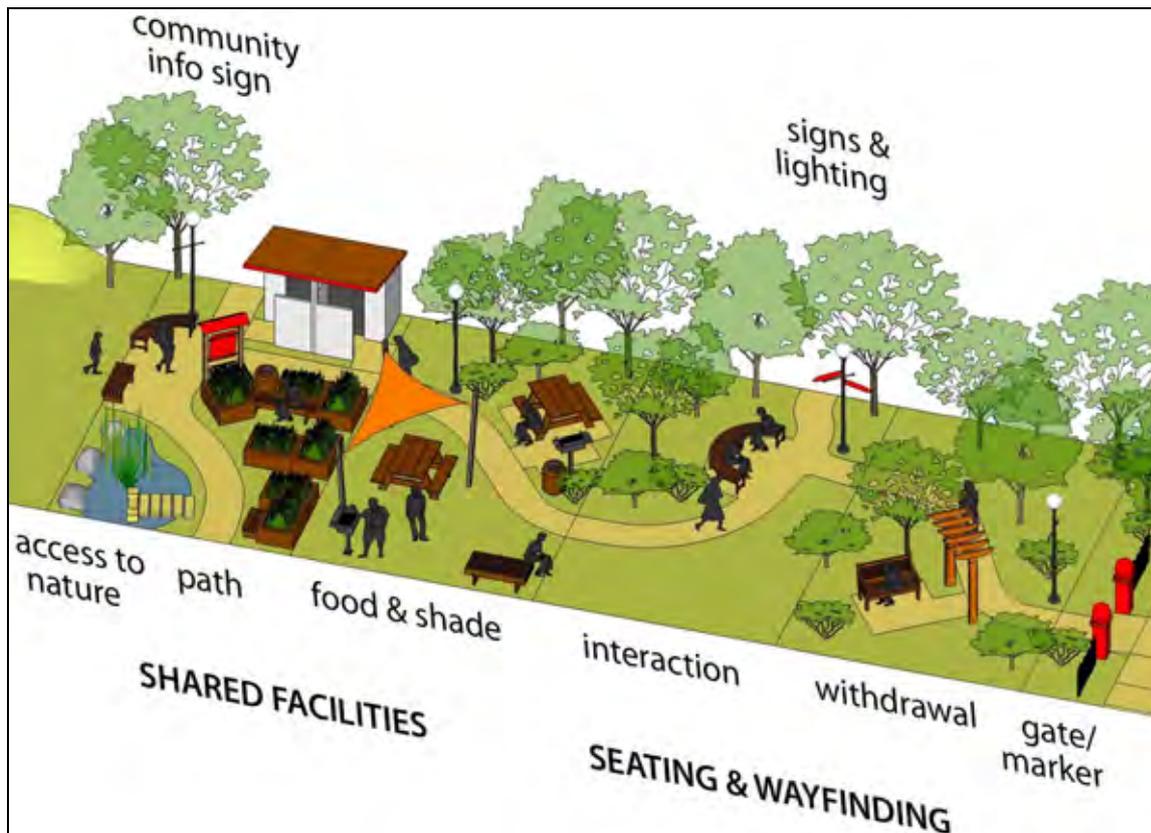


Image credit: Brendan Hurley

- 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 C-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 C-23. Design for a range of uses



Image credit: 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 it can be useful to 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 (see **Part C Section 1.2 E. Crime Prevention through Environmental Design (CPTED)** above), it also 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. Consideration should also be given to the social factors that contribute crime prevention and capable guardianship discussed in Part C.

Include CPTED strategies into shared on-site open space (in addition to those noted in **Section 1.2E**), so that they:

- 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, attract litter and may be impractical around play areas).

Figure C-24. Natural surveillance of shared of shared open space

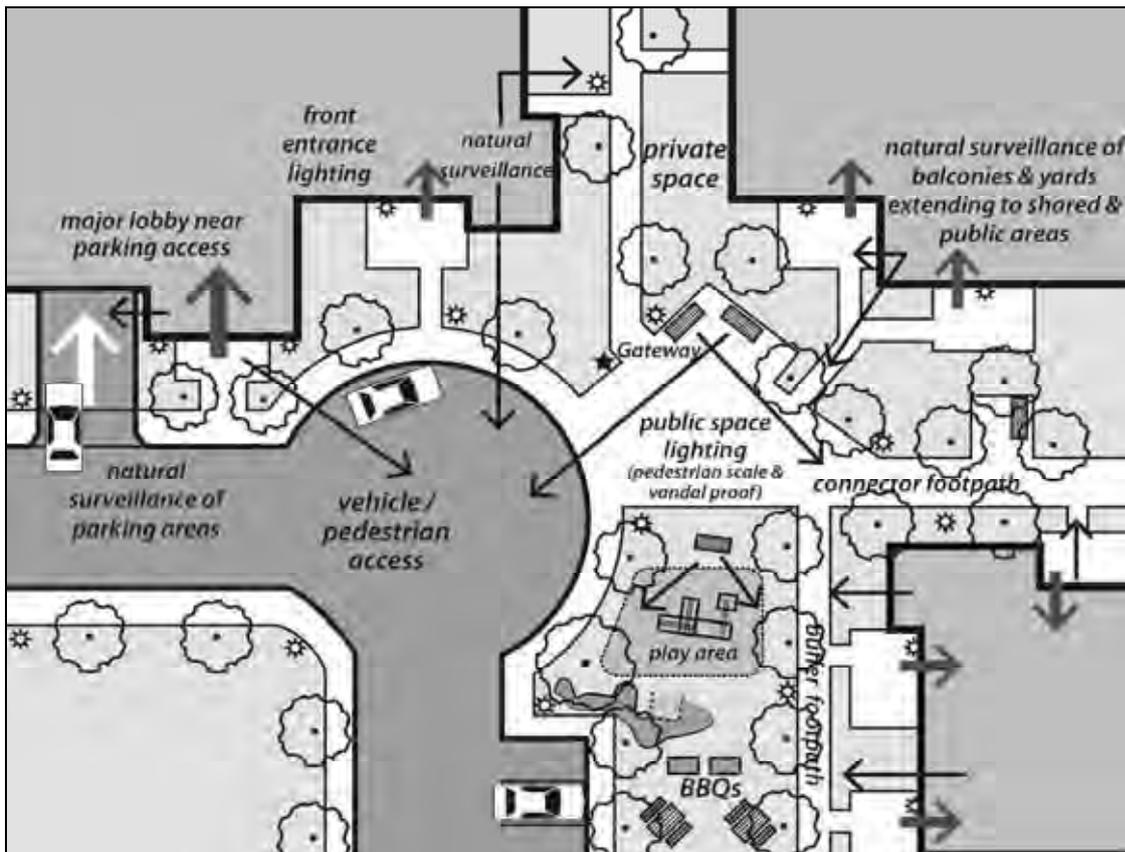


Image credit: Brendan Hurley and Wendy Sarkissian

- 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.

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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 and 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 C-25. The interface between a park and medium-density housing



Image credit: Brendan Hurley

Figure C-26. Natural surveillance of public open space

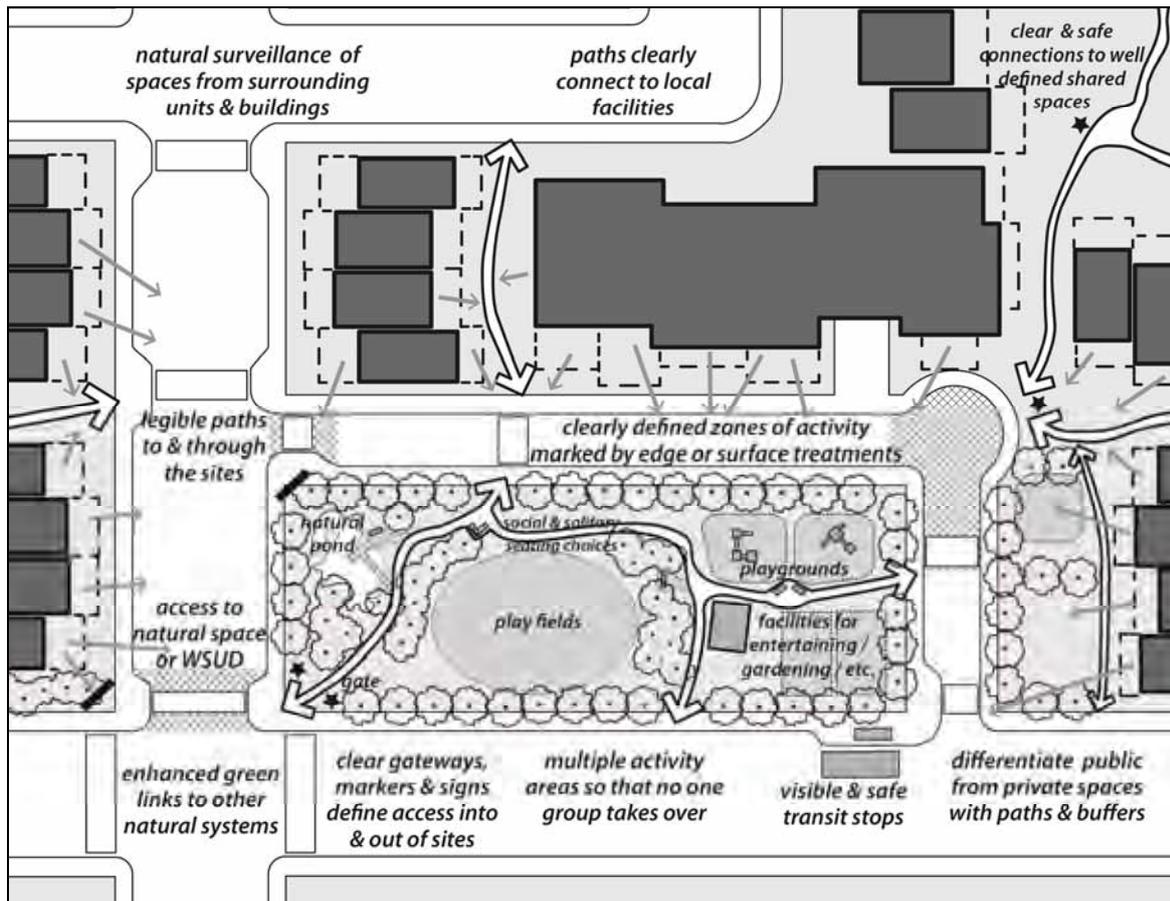


Image credit: Brendan Hurley and Wendy Sarkissian

PART D. GUIDE FOR PUBLIC OPEN SPACE

The primary focus of this guideline 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. The guideline complements *Part C. Guide for On-Site Open Space* and addresses 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

Note: Material for this Part has been drawn from a range of sources. Key references include: Bateman, Sarkissian and 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.

1. 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 than space that is not planned that way. 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.
- **Teens:** 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; it can be 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, a love of Nature and a sense of responsibility.

2. 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 D-1**).

Table D-1. 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 should 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>

Type of Open Space	Description	Notations
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. Take care when planning for young children because of climbing and falling risks.
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 be relied on instead of public open space only 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 used mostly for exercising, commuting and relaxation.

Source: Byrne and Snipe, 2010; Kellet and Rofe, 2009; Bateman, Sarkissian and 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 D-2 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.

Table D-2. Public Open Space Functions in Medium-density Housing Areas

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 ('middle childhood' aged 6 to 12)	✓	✓
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	✓	✓

Functions	Sub-functions	Park	Plazas and Commons
	Water	✓	✓
	Barbeques	✓	
Sport	Sports courts/fields	✓	
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	✓	

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

3. 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

The following general principles make public open spaces 'people places':

1. Easily accessible and visible by potential users
2. Clearly conveying 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. Providing 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. Encouraging 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. Providing an environment which is comfortable

9. Accessible to children, older people and people with a disability
10. Providing opportunities for users to alter or personalise the space to meet their needs, as appropriate (e.g., ability to move chairs and tables)
11. Allowing for attachment to and maintenance of the space by users (especially residents)
12. Able to be easily and economically maintained
13. Incorporating principles of ecologically sustainable design with minimal use of scarce or non-renewable resources
14. Allowing for incorporation of public art and interaction with public art
15. Promoting safety for all groups of users at all times
16. Designed for use at different times of day and over different seasons
17. Programming of activities to encourage participation, activity, 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, the following qualities of neighbourhood parks such that they would 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 of the park.

Figure D-1. Neighbourhood parks provide variety and are well connected

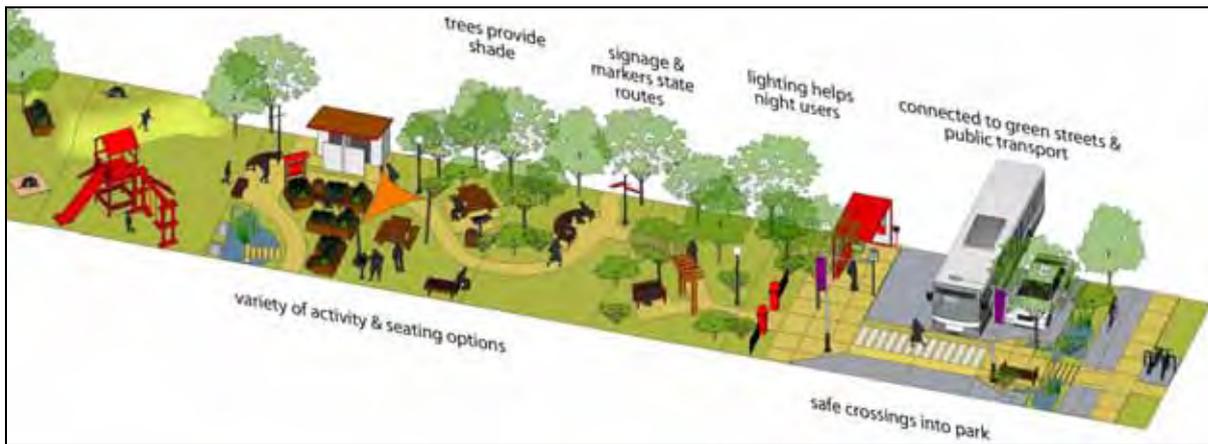


Image credit: Brendan Hurley

3.3. Specific Qualities Applicable to Plazas and Commons

Plazas and commons are predominantly pedestrian areas where people come to sit, meet with friends, observe 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. Needs of Specific Resident Groups in Medium-density Housing Areas

Table D-3 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.

Table D-3. Public open space needs for specific resident groups in medium-density housing areas

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	Expansive lawn area with some shaded areas for a variety of

Resident Characteristics	Behaviour or activity to be supported	Facilities, furnishing and programming
	near home and relaxed social activities	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
	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 disability. 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 wish 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.

Resident Characteristics	Behaviour or activity to be supported	Facilities, furnishing and programming
		Barbeque and picnic areas.

Source: Clare Cooper Marcus, 2012 (unpublished); Kellet and Rofe, 2009

5. Innovations in the Provision of Public Open Space in Medium-density Housing Areas

Expanding the supply of public open space in existing built up areas to support increased population density can be challenging. The competing demand for limited available land and the high cost of purchasing land calls for novel approaches. Some innovative ways to provide public open space in such constrained circumstances are provided in the following examples.

5.1. Re-using Existing Spaces

A. RE-USE OF TRANSIT CORRIDORS: HIGH LINE PARK, NEW YORK

The High Line park is a public park built on an historic, elevated rail line in New York (**Figure D-2**). It is owned by New York City and operated and maintained by a non-profit, community organisation (Friends of the High Line). The High Line park is grade separated from the streets beneath, offering the opportunity to connect areas over what might otherwise be a barrier (such as a major road) and extend the linear open space network. This park is a good example of how, with the right co-operation and innovation, non-traditional spaces, or spaces that are limited, can be transformed into a useable part of the open space network.

Figure D-2. High Line Park, New York

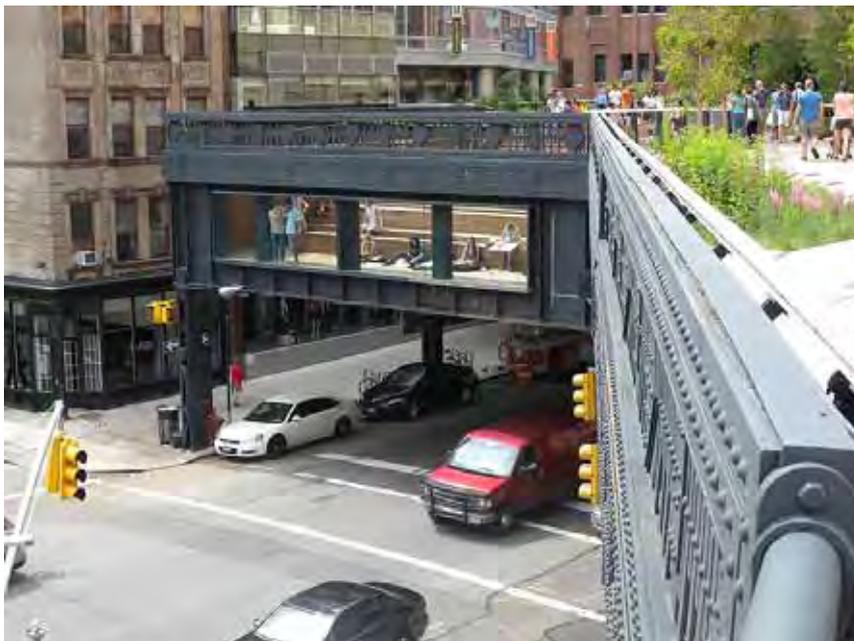


Image credit: Wikipedia. [Note: Authority to use is required prior to publishing]

B. STREET CLOSURES: ARBUTUS WALK, VANCOUVER

Larger, master planned developments can potentially use the existing street network to create new public and shared open space. Arbutus Walk, in the Vancouver neighbourhood of Kitsilano, forms part of a 2.4 ha (6 acre) brownfield site, the former location of a large brewery. Closing streets that would otherwise have brought traffic through the site allowed creation of generous public and shared open spaces and a pleasant pedestrian pathway that winds through the neighbourhood (**Figure D-3**). One of those streets was converted to a green street that connects Arbutus Walk to adjacent neighbourhoods and local amenities and forms part of a larger city-wide network of greenways that promotes walking and bicycling.

Figure D-3. Road closure at Arbutus Walk, Vancouver



Image credit: Andrea Young

C. WOONERVEN AND GREEN STREETS

Rather than separating cars, pedestrians, bicyclists and children's play space, *woonerven* (also called 'homezones' in Britain) intentionally bring all uses into the same roadway (**Figure D-4**). Often surfaced with paving stones rather than asphalt and lacking raised curbs, *woonerven* slow vehicular traffic through residential neighbourhoods via plantings, sharp turns or loops, signage and street furniture to remind drivers that they are guests in this space and to behave accordingly. The usefulness of *woonerven* in medium-density housing design is well-recognised as a way of accommodating vehicles in new developments. However, *woonerven* should be used only when

normal traffic flow can be accommodated and where access can be limited to vehicles with an origin or destination within the *woonerf* (Cooper Marcus and Sarkissian 1986).

Figure D-4. The use of streets for *woonerven*



Image credit: West End Residents Association, Vancouver

Green streets can provide linear corridors creating an attractive environment for walking, cycling, jogging or just relaxing (**Figure D-5**). Green streets can also provide transitory encounters with Nature, opportunities for gardening and play that are complementary to public open space.

Figure D-5. Green Street, Buenos Aires



Image credit: Juris Greste

5.2. Creating New Spaces

A. ROOF SPACE: KAISER CENTER ROOF GARDEN, OAKLAND, CALIFORNIA

A 1.5ha roof garden situated above the five-storey Kaiser Center garage, Oakland, California (**Figure D-6**) provides a public park supporting a high-density urban setting. The park is open to the public 8am to 5pm, Monday to Friday and offers lawns and a varied landscape with larger trees and other vegetation, a function room and views over Lake Merritt-Uptown District. The Roof Garden provides an important open space in the inner city that can be used for community events and informal recreation.

Figure D-6. Kaiser Centre roof garden lawns



Image credit: Oakland Venue Management *[Note: Authority to use is required prior to publishing]*

B. GREEN WALL: MUSEE DU QUAI BRANLY, GREEN WALL, PARIS

The Musée du Quai Branly, a museum in Paris, has included a green wall, providing both a micro-climate effect and a notable feature in the urban fabric. The entire north west façade (200m long by 12 m tall) is covered by a living wall (**Figure D-7**) hosting an hydroponic vertical garden system that allows the plants and buildings to breathe. The living wall contains a range of temperate species from throughout the northern hemisphere. While not a useable space for recreation, the green wall adds to the sense of greenery and open space in a highly urbanised setting.

Figure D-7. Musée du Quai Branly, green wall



Image credit: Sarouche *[Note: Authority to use is required prior to publishing]*

C. LANEWAYS AND PUBLIC DOMAIN IN MEDIUM-DENSITY DEVELOPMENTS: FISH LANE, BRISBANE

Fish Lane runs parallel to Melbourne Street in South Brisbane and is bisected by major arterials (Cordelia and Merivale Streets) (**Figure D-8**). The Brisbane City Centre Master Plan identified it as an opportunity for mixed-use development, including residential, commercial and retail uses. A Master Plan developed to promote integrated development along the whole of Fish Lane includes a series of different public open spaces (as plazas and commons) of varying sizes to enhance the public realm, providing a means to augment public open space in this inner city area.

Figure D-8. Design concept for Fish Lane



Image credit: Archipelago Architects *[Note: Authority to use is required prior to publishing]*

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, Queensland

GLOSSARY

Term	Definition
Acceptable outcome(s)	Statement(s) describing the measures used to determine when a development has achieved a performance outcome. An alternative outcome (different to the acceptable outcome) may be proposed by an applicant and is assessed against the relevant performance outcome. Acceptable outcomes are measurable criteria (or as specific as possible criteria) that provides certainty about how a performance outcome can be met.
Activity generator	Feature that tends to create (or generate) activity. Can result in positive, as well as negative impacts. 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.
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.
Carbon Sequestration	The process of increasing the uptake of greenhouse gases, in particular CO ₂ through trees, soil and other ecosystems. (UN Habitat, 2011)
Concealment spaces	Spaces usually concealed from view that can be used as places for hiding people who might commit criminal acts.
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 disability and is provided in accordance with AS 1428.2.
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. (Draft QPP Planning Provisions version 3.0 and <i>Crime Prevention through Environmental Design, Guidelines for Queensland</i> , Queensland Government, 2007a)
Desired Standards of Service	Desired Standards of Service detail the standards applicable to an infrastructure network (e.g., public open space) that are most suitable for the local context. (Department of Local Government and Planning, 2011)
Displacement	Relocation of illicit activity from a crime hotspot to another area. For example, redevelopment of a vandalised area could solve the 'problem' in that place. However, the perpetrators, still bored, might be likely to continue those activities in another location.
Entrapment spaces	Spaces usually concealed from view that can be used as hiding places or as places for trapping the unwary and for concealing criminal acts.

Term	Definition
Green street	As part of the public realm, a <i>green street</i> 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.
Heat sink	The effect of hard urban surfaces increasing the temperature of urban areas. Also known as the 'heat island' effect of cities.
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.
Legibility	Legibility is an ease of understanding and ability to navigate through an environment such as open space.
Medium-density housing	Means attached dwellings between two and ten storeys (including villas, town houses and apartments). (Council of Mayors SEQ, 2011b)
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.
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.
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.
On-site open space	The private and shared open space provided within a housing development.
Overall outcome	A statement at the beginning of a planning scheme code (which could be a zone code, overlay code or local plan code) that sets out what is intended to be achieved by the code.
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).
Performance outcomes	Statements in a planning scheme code that describe the purpose or objective of the detailed regulation within a code. They provide the assessment criteria when an alternative to an acceptable outcome is proposed by an applicant or where no acceptable outcomes are specified.
Plazas and commons	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.

Term	Definition
Priority Infrastructure Plan	PIPs provide the basis to understand infrastructure networks, upgrades and/or potential new trunk infrastructure to both inform and support the strategic intent and detailed land use planning within the planning scheme. A PIP details what trunk infrastructure is required, where it is required and when it will be needed. (Queensland Government, 2011b)
Private open space	An outdoor space for the exclusive use of occupants of a building (Queensland Planning Provisions Definition - Queensland Government, 2011a).
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).
Queensland Planning Provisions (QPP)	The Queensland Planning Provisions are the standard planning scheme provisions made by the Minister under the Sustainable Planning Act 2009. The provisions provide a consistent format and structure for local government planning schemes across Queensland (Queensland Government, 2011a).
SEQ Place Model	Describes a progression (or transect) of natural and human habitats identified in this study of quality SEQ places. These place types range from natural places, rural places, rural townships, next generation suburban neighbourhoods, urban neighbourhood, centres of activity, CBDs and specific use places. This model is useful for sub-regional, district and local planning areas (Council of Mayors (SEQ), 2011a).
Shared open space	Shared (common) space bounded by the group of dwellings it serves, accessible only to residents.
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.
Structure plan or master plan	Although these terms are given meaning in Section 137 and 151 of the Sustainable Planning Act 2009, in this <i>Toolkit</i> they adopt their common meaning to describe a site or locality planning process that sets out development parameters such as road networks, infrastructure provisions, development type and intensity and open space networks.
Trunk infrastructure	<p>Trunk infrastructure and non-trunk infrastructure are both <i>development infrastructure</i>. <i>Development infrastructure</i> can be summarised as land and/or works for water cycle management (including water supply, sewerage and drainage), transport, parks and land for community facilities. Generally, trunk infrastructure is 'higher order' network development infrastructure, which is external to a development and is shared between developments (e.g., public park).</p> <p>While non-trunk infrastructure is generally 'lower order' infrastructure that is internal to a development or connects a development to the 'higher order' network development infrastructure (Queensland Government, 2011b).</p>
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).

Term	Definition
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).
Woonerf	'Woonerf' is a Dutch name for a living street where people have priority over cars and the street can be used as a public space by people for playing, cycling, socialising or other activity. Also called 'homezones' in the United Kingdom.

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