Urban design guidelines for Victoria
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1.1 Urban structure principles

Urban structure comprises the overall topography and land division pattern of an urban area. It is the pattern and scale of blocks, lots and public spaces, and the arrangement and scale of the movement network’s streets, roads and paths. Whether at the scale of a city, town, neighbourhood, precinct or large development site, it is the interrelationship between all of the elements of urban structure, rather than their individual characteristics, that together make a place. Urban structure includes the location and types of activity centres, public transport nodes and corridors, public spaces, community facilities, and urban infrastructure.

The basic unit of a city’s urban structure is a block. Bounded by streets, blocks contain lots or parcels of land that provide space for buildings and other land uses. While street and block patterns generally remain stable over time, lot patterns and land use can change. Lots may be subdivided or amalgamated for different types of buildings and land uses.

Why is it important?

The urban structure determines how serviceable and flexible an urban area will be, and how well it will integrate with its surroundings. The urban structure contributes to both the function and feel of an area and creates a sense of place. A well-functioning urban structure has connected neighbourhoods, where activity centres are within a convenient walking distance. Urban structure design can enhance personal safety and property security by allowing for informal surveillance opportunities and a choice of routes.

The layout of blocks and lots can support or limit flexibility, diversity and opportunity in a city or neighbourhood, and influence the types of buildings and land uses that can be accommodated. Large blocks might permit a wider variety of development options, but can pose a barrier to movement, while smaller blocks allow greater ease and choice of movement around a neighbourhood.

These urban structure principles apply to the design of activity centres, large development sites, higher density residential precincts, and the public realm. The urban structure principles should be used in conjunction with accepted civil design standards for motor vehicle movement, and water management.

Related guidance

Element 2 Movement network
Element 3 Public spaces
1.1 Urban structure principles

Objective 1.1.1 To provide a permeable and functional urban structure of blocks and streets

Permeability refers to the extent to which the urban structure permits, or restricts, the movement of people or vehicles through an area, and the capacity of the area network to carry people or vehicles.

1.1.1a Create an interconnected street layout with regular block sizes.

→ TIP An interconnected street layout provides a choice of routes, allowing people to move about and goods to be transported with ease and efficiency.

1.1.1b Create a permeable block layout with block dimensions ranging from 120m to 240m long and 60m to 120m wide.

→ TIP A block perimeter of around 600m provides for good pedestrian and vehicular access and an efficient subdivision pattern of the block. Smaller blocks may be appropriate in more intense urban areas.

1.1.1c Extend streets, pedestrian and bicycle paths from existing areas into new areas with direct roads, streets and paths.

1.1.1d Align pedestrian connections along desire-lines with short, straight travel paths.

→ TIP People generally choose the shortest practical path to their destination. Curving street alignments can increase pedestrian and cycling distances, and reduce sightlines. However, in sloping topography, curving streets may be more appropriate to enable flatter travel paths.
Objective 1.1.2  To provide a legible urban structure of blocks and streets

The legibility of an area refers to the ease with which a person is able to find their way around and navigate through the area.

1.1.2a  Lay out street and block patterns with direct, straight or near straight streets.

→ **TIP** Areas with straight streets and clear sightlines are easier to navigate and safer for pedestrians. Tight curving streets can reduce neighbourhood legibility and be more difficult to develop and service.

1.1.2b  Use the area’s topography, slope and contours to achieve an accessible movement network.

→ **TIP** Curving street alignments may increase pedestrian and cycling distances, and reduce sightlines. However in sloping topography, curving streets may be more appropriate to enable flatter travel paths.

1.1.2c  Lay out street and block patterns to create view lines to key landmarks.

→ **TIP** Highly visible landmarks and landscape features aid navigation and way-finding as well as contributing to a sense of place.

1.1.2d  Where a cul-de-sac is necessary, limit the length to less than 75m, with a straight alignment or clear sightlines to the end.

→ **TIP** A short cul-de-sac allows views from the adjoining street to the cul-de-sac end.
### Objective 1.1.3  To ensure the urban structure supports accessibility from neighbourhoods to activity centres and public transport

| 1.1.3a | Lay out streets and blocks to provide reasonable walking distances from dwellings to an activity centre and public transport services.  
   
   → **TIP** A 400m (or 5 minute) street walking distance to an activity centre provides good accessibility for lots intended for medium and higher density residential uses. |

| 1.1.3b | Create a street and block layout where 95 per cent of dwellings are located no more than:  
   - 400m street walking distance from the nearest existing or proposed bus stop, or  
   - 600m street walking distance from the nearest existing or proposed tram stop, or  
   - 800m street walking distance from the nearest existing or proposed railway station.  
   
   → **TIP** 400m is about a 5 minute walk; 600m is about a 7 minute walk; 800m is about a 10 minute walk. |

| 1.1.3c | Provide continuous, direct pedestrian and bicycle access routes from the surrounding neighbourhood to railway stations and public transport stops and interchanges and activity centres.  
   
   → **TIP** Pedestrian and bicycle access routes to a public transport node or activity centre should accommodate both public transport users and others moving around the neighbourhood. More people using the paths will create a safer environment. |
1.1 Urban structure principles

**Objective 1.1.4** To ensure that the urban structure provides good amenity and safe interfaces between infrastructure corridors and adjacent land uses

1.1.4a Locate major infrastructure corridors and installations to minimise their potential to be a barrier to cross movement.

→ **TIP** Infrastructure corridors such as railway lines, motorways and pipe tracks can be barriers to crossing but may provide opportunities for parallel linear parks and paths.

1.1.4b Provide conveniently located grade separated pedestrian and bicycle crossings across rail corridors, motorways and other natural barriers, to connect neighbourhoods and key destinations.

→ **TIP** In urban areas, the crossing location and frequency should be informed by local circumstances and need.

1.1.4c Where a freight railway or motorway corridor interfaces with lots for residential or other sensitive uses, locate the rear boundary of lots toward the corridor.

→ **TIP** Locating the rear boundaries of lots toward a freight railway or motorway corridor interface provides better opportunities for noise mitigation where relevant.

1.1.4d Where a railway operating corridor serves only metropolitan passenger services, provide a street between the railway operating corridor and the surrounding area, to provide an active frontage.

→ **TIP** A street is not an effective noise buffer, but metropolitan services are generally of lesser noise impact than diesel freight trains.

1.1.4e Where lots adjoin high volume or high speed major roads, provide a service road and front lots on to the service road.

→ **TIP** Avoid block layouts where lots back onto arterial or major roads. This results in poor pedestrian safety and landscape amenity along the road.
1.2 Activity centre structure

Activity centres, although of different sizes and types, are a focus for enterprise and social interaction, incorporating community facilities and services, shopping, employment and residences. Activity centres are the focus of public transport nodes where services converge. Activity centres include metropolitan centres, regional cities and town centres in rural areas.

An activity centre generally has an intense central core with smaller street blocks and a higher density of streets and lots. The structure of activity centres should allow for more intensive development, street frontage exposure for display, safe public spaces and pedestrian access to facilities.

Why is it important?

Activity centres provide residents, visitors and workers with easy access to a range of services and facilities as well as opportunities for establishing businesses, or simply being sociable and meeting others. By providing a variety of lot sizes and shapes in a connected movement network, an activity centre can accommodate a wide variety and scale of uses and buildings and respond to the changing needs of residents, businesses and visitors.

Some specialised and single-focus activity centres may have extended periods of inactivity with poor safety out-of-hours. Activity centres with a diverse mix of activities and uses adds to their vibrancy and economic viability as well as improving perceptions of safety and reducing opportunities for crime.

Related guidance

Element 1.1 Urban structure principles
Element 2 Movement network
Element 4 Public transport environs
Objective 1.2.1  To ensure accessible and functional activity centres

1.2.1a  Locate the activity centre where the main streets and public transport routes converge.

1.2.1b  Locate lots for medium and higher density residential and retirement housing within a five minute walk (400m) of an activity centre.

1.2.1c  Shape and orient blocks on the perimeter of the activity centre to support direct access to the activity centre core, from the surrounding neighbourhood.

1.2.1d  In activity centres, provide a closely spaced and interconnected network of street and lanes.

   → TIP  Having more streets allows people a choice of routes, and can disperse the volume of pedestrian and vehicle traffic across a number of routes. In areas of intense activity, more streets can also provide increased frontage length.

1.2.1e  Provide rear or side lane vehicle access to lots within activity centres.

   → TIP  By providing rear or side lane access for vehicle, service and delivery functions, street frontages can remain safe and active, uninterrupted by vehicle crossovers.

1.2.1f  Create a range of lot sizes for intense uses at the activity centre core.

   → TIP  The core of the activity centre is the best connected location; the functional centre may not be the geographical centre point. The core is often where the main streets connect.
1.2 Activity centre structure

Objective 1.2.2 To ensure activity centre structure supports public transport access

1.2.2a Provide for train stations and public transport interchanges within the core of activity centre.
   → TIP While frequent bus movements on pedestrian priority streets are not desired, an interchange crossing the main street at one end may be a convenient, accessible option.

1.2.2b On streets within activity centres that accommodate public transport services, minimise intersections and vehicle access points to lots.
   → TIP Private vehicles entering or turning out of a street that accommodates on-road public transport, can cause service delays. See Guideline sources and references for link to Public Transport Guidelines.

1.2.2c Provide for priority or separated lanes for public transport on roads where multiple public transport routes converge within activity centres.
1.2 Activity centre structure

Objective 1.2.3 To ensure the activity centre structure supports safety and amenity

1.2.3a Locate lots intended for retail and commercial uses on well-connected main streets in activity centres.

→ TIP Intense and diverse commercial activities on smaller lots with narrower frontages, or mixed uses with multiple tenancies, contribute to an active and interesting public realm.

1.2.3b Locate lots for active uses and uses with long operating hours on pedestrian priority streets.

→ TIP Personal safety is best achieved by having people present on the street during the day and at night, and by providing opportunities for informal surveillance of public spaces.

1.2.3c Provide lots for shops on streets that allow zero street setbacks and continuous built frontages.

→ TIP Retail activities in buildings function best when they have direct access abutting the footpath and when supported by similar neighbours.

1.2.3d Surround the activity centre core with lots that are large enough to accommodate higher density residential uses and workplaces.

→ TIP Small, narrow lots are difficult to develop at higher densities.

1.2.3e Locate large public facilities, such as hospitals, schools, and major recreation facilities on public transport routes and at the edge of activity centres.

→ TIP Facilities that occupy large land areas can create a barrier to movement through an activity centre. Out of operating hours, the facilities may present an inactive edge to streets and paths.

1.2.3f Locate lots for large format uses that generate high vehicle traffic volumes on wider streets at the edge of activity centres, and with easy access to major roads.
1.2 Activity centre structure

Objective 1.2.4 To activate the activity centre’s interface with its barrier edges

Typical barriers or edges to an activity centre are railway or motorway corridors, a water body or a natural feature.

1.2.4a Where an activity centre has a barrier or edge, provide an active public space or a street between the edge and the adjacent buildings.

→ TIP Where a barrier or edge has few passing pedestrians or little activity in the adjacent buildings (e.g. has a rear boundary toward the edge), public spaces in these areas may attract fewer visitors and be a security risk.

Objective 1.2.5 To respond to change within an activity centre.

As an activity centre evolves and changes, its structure may need review to provide new connections, changes in land use patterns or the re-allocation of public space for different activities. Structure planning can assist in managing this change.

1.2.5a Create a regular block and lot pattern within the activity centre that enables future lot subdivision or consolidation.

→ TIP Irregular shaped lots can limit future lot subdivision or consolidation.

1.2.5b Where activity centres experience increased residential densities or an expanding worker population, maintain or increase the capacity of the pedestrian movement network by adding new mid-block links and public spaces.

→ TIP Periodic reviews of the functionality and safety of the public realm in an activity centre, may indicate need for adjustment to its structure.

1.2.5c As an activity centre evolves and intensifies, allow future development to front laneways.

1.2.5d When consolidating or subdividing lots, maintain a fine-grained street frontage.

→ TIP Fine-grained street frontages have multiple shopfronts with doorways and windows.
1.3 Large development site structure

Large parcels of land within cities and towns sometimes become available for development and new uses. Often in prime locations, these sites can be publicly owned (such as railway corridors, surplus government land or dockyards) or they can be former commercial, industrial or institutional sites that are no longer needed for their original purpose. They may be located in activity centres or are accessible to transport connections, services and jobs.

Large development sites need to integrate with the existing urban structure of a city or neighbourhood. This often involves creating new residential or commercial areas and movement networks, as well as infrastructure, public spaces and community facilities.

Why is it important?

Large development sites that become available contribute to the growth and evolution of cities and towns. The way a parcel of redeveloped land is connected to the surrounding area and divided into blocks, lots and streets will influence the area’s accessibility and potential future use patterns.

Large development sites can provide an opportunity to repair and enhance the existing urban infrastructure in the area, and there may be too few dwellings to sustain local business activity, insufficient public space or recreation opportunities. The development of the site may also enable new connections to be made between adjacent established areas.

Related guidance

Element 1.1 Urban structure principles
Element 1.5 Public realm structure
Element 2 Movement network
1.3 Large development site structure

**Objective 1.3.1** To integrate a large development site into its surrounding area

1.3.1a Connect the development site’s movement network to the movement network of the surrounding area.

→ **TIP** The movement network includes pedestrian and bicycle paths, public transport services, streets and roads.

1.3.1b Create new links across the development site to connect the new neighbourhood with the surrounding area.

1.3.1c Provide at least two ‘through’ streets across a new neighbourhood in a development site, linking ‘centre to edge’.

→ **TIP** Very large development sites may require additional through routes.
Objective 1.3.2  To ensure large development site structure provides a high level of amenity and functionality for residents

1.3.2a  Where possible, include uses and facilities in the development site that are lacking or insufficient in the surrounding neighbourhood.

1.3.2b  Locate higher intensity activities on well-connected streets within a development site.
   → TIP  Higher intensity activity examples are shops, community services, cafes and cinemas.

1.3.2c  Where the street block perimeter is greater than 600 metres, create cross-block pedestrian links.
   → TIP  Studies of pedestrian behaviour suggest street block perimeters greater than 600m are more likely to discourage walking. Creating pedestrian permeability across a block encourages walking.

1.3.2d  Provide the size and types of public open spaces for informal and active recreation to serve the intensity and type of development.
   → TIP  Higher densities of residents or workers in an area require access to a higher quantity and diversity of public open spaces.
1.3 Large development site structure

**Objective 1.3.3** To large development sites maintain the amenity of adjacent residential uses

1.3.3a Create a transition from large development sites to adjacent residential neighbourhoods using scale, built form and uses.

→ **TIP** A transition can be achieved through the arrangement and size of new blocks and lots at the development site edge and the future built form, location of activities and street design.

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**Objective 1.3.4** To ensure the public realm of large development sites is well-maintained and managed

1.3.4a Develop public open spaces, civil infrastructure and streets to a standard acceptable for ongoing maintenance and management.

→ **TIP** The local council standards and materials should be met for adoption and for ongoing management of the public realm within large development sites.
1.5 Public realm structure

The public realm comprises spaces and places that are open and freely accessible to everyone, regardless of their economic or social conditions. These spaces can include streets, laneways and roads, parks, public plazas, waterways and foreshores.

Public realm structure delivers the location of and connection to destinations and activities. It includes layout and detailed design to support the function and amenity of streets, public spaces, public transport access and the interface between the public realm and private property. While the overall urban structure may be enduring, the purpose and detailed arrangement of public spaces may change over time.

Why is it important?

The public realm provides a space for people to be free to access, to move about and to enjoy recreation. It enables people to carry out their daily business, to engage in activities or meet with others or simply to be. The public realm must be attractive, inclusive and safe to be in. An inhabited and well maintained public realm feels safe and encourages people to use spaces.

Related guidance

1.1 Urban structure principles
1.2 Activity centre structure
1.3 Large development site structure
1.4 Higher density residential precinct structure
2 Movement network
3 Public spaces
4 Public transport environs
6 Objects in the public realm
1.5 Public realm structure

Objective 1.5.1 To ensure a public realm structure where the movement network and the land uses support each other

1.5.1a Locate local walking destinations and activities along main pedestrian streets and paths.
   → TIP Local walking destinations can include railway stations, bus and tram stops and interchanges, shops, schools parks, recreation and community facilities.

1.5.1b Provide for a level of active frontage and lot access appropriate to the street function and building use patterns.
   → TIP Level of active frontage is reduced where vehicle access to narrow lots is via its street frontage. Driveways and crossovers reduce street activation and compromise pedestrian safety. See Element 5 Buildings.

1.5.1c Co-locate public transport nodes with active uses and busy public spaces.
   → TIP Active uses and public spaces can attract other people to use the public transport node. This helps increase the numbers of people using the area and improves security, particularly at night.

1.5.1d Locate active, non-residential uses at ground level at the interface with major public transport nodes.
   → TIP Railway stations and major bus and tram interchanges generate many vehicle movements and operate from early morning to late night. Active commercial uses can benefit from the passing pedestrians and this contributes to safety in the area.

1.5.1e Where a railway station or a public transport interchange interfaces with a public space, provide active uses at ground level at the station or interchange interface with the public space.
1.5 Public realm structure

Objective 1.5.2 To ensure the public realm structure provides for accessible, safe and conveniently located public spaces.

Public spaces provide opportunities for active and informal recreation. The location and context of public spaces within the urban structure is critical to a space’s success. Public space that has poor access, or is located away from the community it serves, will not be well used.

1.5.2a Create public spaces where the local catchment has sufficient potential users to activate the space.

→ TIP A walkable catchment to a public space varies with the public space type and the user. A local park catchment distance is shorter for a child or older person than for other users. A plaza lunch place may need to be within five minutes’ walk of a workplace to be attractive.

1.5.2b Provide for a variety of parks and public spaces, for informal and active recreation, located within a 400m walking distance from dwellings, workplaces, schools and shops.

→ TIP 400m is a five minute walk.

1.5.2c Locate public spaces where they can be connected to their surrounding area via pedestrian priority streets and paths.

→ TIP Public spaces are used if they are convenient and safe to access.
Objective 1.5.3  To ensure the public realm structure provides for suitably-sized, comfortable and purposeful public spaces

The size and dimensions of a public space affect its possible uses and safety in terms of informal surveillance from the surrounding area.
Large public spaces can feel uninhabited and lonely, even overwhelming and threatening. Conversely, a small space may feel comfortable for quiet uses but not be a functional size for some active uses.

1.5.3 a  Provide the number and types of public spaces that meet local needs.
  → TIP  A strategic planning process can identify and establish local needs and the appropriate type and size of public space to serve the community’s needs.

1.5.3 b  Create public spaces of sufficient size to accommodate desired activities.
  → TIP  Often the most popular and cared-for plazas and parks are compact and intimate.
1.5 Public realm structure

Objective 1.5.4  To ensure a public realm structure where streets support the amenity and function of neighbourhoods

1.5.4 a  Make the main streets sufficiently wide to serve their function in the movement network and as a public place, and to accommodate services infrastructure.
   → TIP A street may need to accommodate public transport lanes and stops, pedestrians, cyclists, vehicles as well as accessible utilities infrastructure and service verges.

1.5.4 b  Where a street functions as an activity centre main street, provide block lengths and street widths to accommodate on-road public transport vehicles and accessible public transport stops.

1.5.4 c  Set the street width in relation to the future building height and setback distance so as to allow daylight and winter sun access to key public spaces within streets.
   → TIP In some situations, creating shaded streets may improve comfort levels in hot weather.
   → TIP A strategic planning process can identify and establish key public spaces.

1.5.4 d  Provide space within the street for trees, landscaping and to accommodate social activities and utility infrastructure.
   → TIP Streets can be used for informal socialising and recreation, outdoor dining, street vendors, public transport waiting facilities, infrastructure services and street furniture. See Element 6 Objects in the public realm.

1.5.4 e  Where lots front pedestrian priority streets or are 6m or less in lot width, provide rear vehicle access to off-street parking.
   → TIP Where narrow lots have vehicle access from the front, car parking access may dominate the street interface, while crossovers may reduce pedestrian safety.

1.5.4 f  Provide commercial lots with service access lanes or service courts separated from pedestrian access.
   → TIP Providing service lanes and service courts in commercial premises ensures pedestrians are safely separated from vehicles.
Objective 1.5.5 To ensure the public realm structure provides high amenity and safe interfaces between different uses

Interfaces occur between different land uses, or a new and an existing neighbourhood.

1.5.5a Where lots border a public open space, provide an active frontage toward the public open space.

→ TIP Public spaces bounded by blank rear or side fences limit the opportunity for informal surveillance and reduce security for public space users and for properties bordering the public space. See Element 3 Public spaces.

1.5.5b Locate compatible uses facing each other across a street.

→ TIP Amenity and safety impacts can arise where potentially incompatible uses, such as industrial and residential uses, face each other across a street.

1.5.5c Locate the transition between incompatible uses along rear boundaries of lots.

→ TIP Place land use zoning boundaries along rear lot boundaries rather than street frontage boundaries. A rear boundary wall can provide a buffer between incompatible uses and the amenity of the street is safeguarded.
1.5 Public realm structure

Objective 1.5.6 To ensure a well-managed, high amenity public realm

The public realm has many stakeholders and is managed by a number of agencies, each with different responsibilities and interests. This adds to the complexity of developing and managing a successful place.

1.5.6a Develop public spaces, civil infrastructure and streets to a standard acceptable for ongoing maintenance and management.

→ **TIP** The local council standards and materials should be met for adoption and for ongoing management of public spaces.

1.5.6b Establish a an integrated management agreement for a precinct to coordinate the maintenance and repair program for the public realm.

→ **TIP** For example, regularly maintain landscaping and public facilities, and when repairing paving, also replant missing street trees.

1.5.6c Where neighbourhoods experience increased residential densities, review the amount and type of public open space and street space to meet the local community’s needs.

→ **TIP** Periodic reviews of use and density pattern changes and urban infrastructure performance will assess the need for intervention. Structure planning can assist in managing this change.
2.1 Movement network principles

The movement network is the interconnected system of streets, roads and paths that accommodates pedestrians and cyclists, on-road public transport, emergency and private vehicles. The movement network connects places and activities, and allows people and goods to reach their intended destinations and to access private land.

Among its many functions, the movement network land area can provide space for utilities infrastructure and car parking, and can also provide access to daylight and ventilation for adjacent buildings. A well-functioning movement network provides optimal walking and cycling access to destinations such as activity centres, work, schools, public transport and parks, and it has high levels of legibility, convenience, amenity and safety for users.

Why is it important?

Good connections to places and linkages between different modes of transport, ensures equitable access to facilities, services and public transport. The design and layout of the movement network greatly affects people’s mobility and travel options as well as their safety and wellbeing. Streets play an important role in enabling people to be more physically active and healthy. Streets also play an important role as public spaces, supporting social interaction and providing places for cultural expression.

These guidelines focus on urban design for active transport – pedestrians and cyclists and access to public transport. Provision for street design for vehicles is covered elsewhere by civil engineering standards.

Related guidance

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### 2.1 Movement network principles

**Objective 2.1.1** To ensure the movement network accommodates the diversity of transport modes and supports activities, including active transport

#### 2.1.1a
Provide direct, continuous and well-lit pedestrian and bicycle routes.

#### 2.1.1b
Provide a pedestrian network that caters for persons of all abilities.

#### 2.1.1c
Provide for walking and cycling on all streets.

#### 2.1.1d
Allocate a street function and mode priority to each street in the network.

> **TIP** SmartRoads, a tool for assigning priority to different modes of transport, was developed by VicRoads. It provides guiding principles for road use by transport mode, place of activity and time of day. See Guideline sources and references.

#### 2.1.1e
Establish a level-of-service provision for each mode on each movement network section.

> **TIP** Streets need to allocate sufficient space to accommodate the anticipated volume of pedestrians and cyclists as well as on-road public transport, vehicles and on-street car parking. For other modes see Guideline sources and references.

#### 2.1.1f
Maintain clear sightlines to landmarks to assist pedestrians and cyclists to orient themselves and move around an area.
Objective 2.1.2  To ensure the movement network provides for safe interactions between transport modes

2.1.2 a  Provide clearly marked, direct and safe connections for pedestrians travelling between movement modes.

→ TIP  Whenever people move between modes, such as between a parked car and public transport, they are pedestrians.

2.1.2 b  Arrange vehicle crossovers to allow clear sightlines between drivers entering the crossover and pedestrians and cyclists on the path.

Objective 2.1.3  To maintain a safe, inclusive and serviceable movement network

The movement network is managed by a number of agencies, each with different responsibilities and interests. This adds to the complexity of developing and managing a successful network.

2.1.3 a  Manage the movement network and street space to respond to changes in use patterns and community needs.

→ TIP  The movement network can be managed by creating shared zones, vehicle lane controls, pedestrian-only periods, public transport priority periods, variable traffic light phases, parking controls, speed limits, and space for kerb cafes, street vendors and buskers.

2.1.3 b  Schedule periodic reviews of the movement network performance to inform network adjustments.
2.2 Pedestrian priority streets

Pedestrian priority streets give high priority to walking and cycling, while allowing low-speed motor vehicle traffic (under 40km per hour). These streets are usually found in areas of intense and diverse activity such as activity centres, education facilities and public transport interchanges. They accommodate diverse travel modes as well as provide a public space function. Bicycle lanes may either be provided as a separate lane, or a shared path with other modes. Streets may also restrict vehicle types or access at times.

Why is it important?

Pedestrian priority streets perform many functions. They are comfortable and safe for all pedestrians, including those with a disability, and provide a safe environment for low-speed cycling. They can also be the setting for informal activity such as performers and vendors. Well-designed pedestrian priority streets encourage walking and cycling. Higher pedestrian numbers support the viability of nearby businesses, and allow uses such as cafes and restaurants to ‘spill out’ on to the street.

Related guidance

Element 2.1 Movement network principles
Element 3.2 Street spaces and plazas
Element 6 Objects in the public realm
## 2.2 Pedestrian priority streets

**Objective 2.2.1** To ensure pedestrian priority streets maximise the convenience and safety of walking and cycling modes

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
<th>Tip</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1a</td>
<td>Co-locate the pedestrian, bicycle and vehicle paths.</td>
<td>Locating mode paths side by side increases the likelihood of informal surveillance, as there are more people on the street, more of the time. When pedestrian-only malls and separated pedestrian paths have low levels of activity they can feel unsafe.</td>
</tr>
<tr>
<td>2.2.1b</td>
<td>Allocate a greater portion of street space to pedestrians and cyclists.</td>
<td>Pedestrian priority streets work best with high levels of pedestrian traffic and of activity within adjacent buildings.</td>
</tr>
<tr>
<td>2.2.1c</td>
<td>Where there are high numbers of pedestrians and low numbers of vehicle movements, create a ‘Shared Zone’.</td>
<td>If an existing street or lane is too narrow to provide a footpath that complies with Disability Discrimination Act requirements there may be no option but to treat the street as a ‘Shared Zone’.</td>
</tr>
<tr>
<td>2.2.1d</td>
<td>Keep the kerb radius at intersections to a minimum to encourage vehicle traffic to slow down when turning left into side streets.</td>
<td>The kerb radius should be kept to a minimum compatible with street cleaning, bus movements and road safety requirements. See Guideline sources and references.</td>
</tr>
</tbody>
</table>
Objective 2.2.2  To ensure the interface between the pedestrian priority street and buildings supports pedestrian amenity and safety

2.2.2a  Place doors and windows of buildings to overlook the street.
   → TIP  See Element 5 Buildings.

2.2.2b  Include splays to driveway exits from laneways, buildings and car parking facilities to maintain sightlines from vehicles.
   → TIP  See Guideline sources and references for VicRoads Supplement to the Austroads Guides to Road Design.

2.2.2c  Provide space within the street for activities that support adjacent uses.
   → TIP  To attract pedestrians, streets need to provide a high level of interest for users. Street spaces can accommodate outdoor dining, vendors, public art, performance and recreation.

2.2.2d  Where possible integrate shelters and awnings onto the building facade on pedestrian priority streets.
   → TIP  Integrating shelters, by attaching them onto the building wall, allows the street spaces to remain uncluttered. Building Code of Australia sets out design standards for building projections beyond the street alignment. See Element 5.1 Buildings in activities areas, and Element 6 Objects in the public realm.
2.2 Pedestrian priority streets

Objective 2.2.3  To relate the scale of surrounding buildings to the pedestrian priority street

2.2.3a  Use street width, building height and landscape design to create a sense of enclosure for street users.

→ **TIP** The ratio of building height to street width can affect pedestrian activity. Narrow streets can encourage pedestrian activity. See Element 5 Buildings.

2.2.3b  Arrange the street furniture and finishes to emphasise the pedestrian space.

→ **TIP** Emphasising pedestrian spaces, for example by using entry markers and changed paving, sends a message to all street users that pedestrians are the priority.

Objective 2.2.4  To manage the use of the pedestrian priority street as an active public space

2.2.4a  Implement programs to facilitate and manage activities in the street space.

→ **TIP** See Element 3.2 Street spaces and plazas.

2.2.4b  Enable adjacent businesses to use the street space for café furniture and to display merchandise.

→ **TIP** Kerbside dining brings activity into the street. Increase the street space available for social activities as demand increases.

2.2.4c  Implement programs to enliven blank building walls.

→ **TIP** Architectural detail, wall art, lighting and advertising can transform windowless walls into attractive facades.
2.2 Pedestrian priority streets

Objective 2.2.5  To maintain clean, attractive and serviceable pedestrian priority streets

2.2.5a  Design streets to facilitate efficient maintenance.
  TIP  Poorly maintained streets are known to influence perception of safety.

2.2.5b  Promptly remove graffiti and replace damaged furniture.
  TIP  Damaged public furniture should be quickly removed and replaced to reinforce care and the perception of a safe environment. See Element 6 Objects in the public realm.
2.3 Pedestrian and bicycle paths

Pedestrian and bicycle paths specifically provide for people on foot, bicycle or other mobility aid vehicles. Paths may be located on local streets and major roads, in public spaces such as parks and reserves, or through semi-private spaces such as car parking lots, forecourts and arcades. Paths may be solely for pedestrian use, cyclist use, or shared paths for pedestrians and cyclists. Pedestrian and bicycle routes should connect people directly with local destinations such as schools, shops, train stations and parks.

Why is it important?

Convenient, safe and comfortable pedestrian and bicycle paths are a valuable part of the movement network, and act as more than just thoroughfares. Footpaths are multi-use environments where people socialise, conduct business and observe the world around them as well as travel from one place to another on foot. Pedestrian and bicycle paths are also very important in enabling people to be physically active.

Pedestrian and bicycle paths are most inviting when they are direct, highly visible and well sign-posted, offer shade, seating and end-of-journey facilities. The diverse needs of pedestrians and cyclists – children and young people, older people and those with a disability who may be using mobility aids – require inclusive design solutions.

Related guidance

Element 2.1 Movement network principles
Element 2.4 Pedestrian and bicycle crossings

Austroads ‘Guide to Road Design’ provides technical guidance for path design.
2.3 Pedestrian and bicycle paths

**Objective 2.3.1** To ensure effective pedestrian and bicycle path connections to destinations

2.3.1a Establish a continuous system of pedestrian paths connecting neighbourhoods, along all streets, continuing through public spaces, and to activity centres and public transport nodes.

2.3.1b Include pedestrian paths on both sides of local streets and major roads.

2.3.1c Where low levels of pedestrian and bicycle activity are expected, install *shared paths* for pedestrian and bicycle movement.

2.3.1d Where high levels of pedestrian and cycle activity are predicted, install mode *separated paths* for pedestrian and bicycle movement.

   → **TIP** A shared path is not appropriate where high volumes of pedestrian and bicycle traffic are expected. See Guideline sources and references for *VicRoads’ Traffic Engineering Manual Vol 1*, Chapter 5 for traffic volume triggers.

2.3.1e Where high levels of cyclists are predicted, locate kerb separated bicycle lanes on the kerbside of an on-street parking lane.

   → **TIP** Kerb separated bicycle lanes, such as the ‘Copenhagen’ style bicycle lanes, are safest where few crossovers to properties or cross-streets will intersect with the bicycle lane.
2.3 Pedestrian and bicycle paths

Objective 2.3.2 To ensure pedestrian and bicycle paths are accessible and serviceable

In designing a path, consider the functions the path will perform and the variety of people who may use it, including people with wheelchairs or prams.

2.3.2a Set the path width to accommodate the anticipated or predicted levels of pedestrian and bicycle traffic.

2.3.2b Allow for wider paths in areas with high levels of pedestrian or bicycle use or where growth in traffic is anticipated.

2.3.2c Allow for additional verge width to accommodate the space required for street furniture, facilities and infrastructure.

2.3.2d Preserve a minimum height of at least 2.5m above the path that is clear from overhanging objects.

→ TIP Overhanging objects, trees, wires or signs can reduce the functional height of a path, and can be a hazard to pedestrians and cyclists.

2.3.2e On shared paths, allocate additional width for passing places and crossing places.

2.3.2f Where bicycle paths curve, set an inside radius of at least 15m and preferably 30m.

→ TIP Cyclists rely on forward motion to maintain balance. Slowing for sharp turns can unbalance inexperienced riders.
## 2.3 Pedestrian and bicycle paths

### Objective 2.3.3
To ensure pedestrian and bicycle paths maximise pedestrian and cyclist safety, amenity and security

| 2.3.3a | Lay out paths to allow pedestrians and cyclists clear sightlines for a distance of at least 15m ahead.  
→ **TIP** The clear distance provides a view line to potential threats or hazards, such as hiding spots or oncoming and crossing traffic. |
| 2.3.3b | Where bordered by fences, set pedestrian or bicycle paths to be greater than 3m wide, and with a straight, or near to straight alignment.  
→ **TIP** Paths may need buffer space along sides where there are obstacles or hazards. |
| 2.3.3c | Where bordered by fences, arrange pedestrian or bicycle paths with opportunities for informal surveillance from adjacent properties.  
→ **TIP** Paths bordered by fences or walls can feel unsafe, particularly in areas of low activity. Wider view lines and buildings overlooking pedestrian paths provide a sense of safety. |
| 2.3.3d | Minimise abrupt level changes along pedestrian and bicycle paths. |
| 2.3.3e | Grade the surface of pedestrian and bicycle paths to shed water readily and locate drainage pits outside of the travel path. |
| 2.3.3f | On busy or long distance paths, provide shade and shelter, way-finding signs and frequent seating. |
| 2.3.3g | Provide formal seating at regular intervals along major walking routes to assist those who need to pause or rest.  
→ **TIP** Seating placed at 100m intervals provides a comfortable stopping distance for less able walkers. |
| 2.3.3h | Provide directed, low-glare lighting to pedestrian and bicycle paths along streets.  
→ **TIP** Ensure street lighting illuminates pedestrian paths, not just the roadway. |
Objective 2.3.4  To ensure pedestrian and bicycle paths provide safety for pedestrians and cyclists on vehicle crossovers

Vehicle crossovers and entries to laneways can pose a risk to pedestrians and cyclists, both as trip hazards and vehicle collision hazards. For the design of vehicle exits from buildings see Element 5.4 Car parking structures, and for car parking lots see Element 2.8 Car parking lots.

2.3.4a  Minimise the number of vehicle crossovers that intersect pedestrian and bicycle paths.

2.3.4b  Locate essential vehicle crossovers on straight street sections in areas of high visibility to approaching pedestrians and cyclists.

2.3.4c  Provide path treatments across vehicle crossovers to signal priority for pedestrians and cyclists.

→ TIP  Vehicle crossover surface treatments such as raised ‘bump-over’ paths, rumble strips and coloured path surfaces alert drivers to the presence of pedestrians or cyclists.
2.3 Pedestrian and bicycle paths

Objective 2.3.5  To minimise hazards to pedestrians and cyclists from path edges

2.3.5a  Set pedestrian and bicycle paths back from the roadway or other obstructions.

2.3.5b  Set planting and trees well back from pedestrian and bicycle path edges.
  →  TIP  Where dense shrubbery and planting is close to a path, it can provide potential concealment opportunities for attackers. This is a particularly high risk on off-street pedestrian and bicycle paths.

2.3.5c  Design fences and barriers along bicycle lanes or paths to limit snagging handlebars or pedals, spearing injuries or collision.
  →  TIP  Bollards, picket fences and log barriers pose a hazard to cyclists. See 6.4 Barriers and fences.

2.3.5d  Provide fences and barriers with reflective surfaces and light colours.
  →  TIP  Reflective treatments or light colours can enhance visibility of fences and barriers at night.

2.3.5e  Maintain clear sightlines along paths and remove obstructions from areas adjacent to pedestrian and bicycle paths.
  →  TIP  See Guideline sources and references for VicRoads Supplement to the Austroads Guide to Road Design.

2.3.5f  Implement a path maintenance program to preserve firm path edges, keep gravel paths compacted and remove loose material, trip hazards or debris from path surfaces.

Objective 2.3.6  To ensure pedestrian and bicycle path management responds to changes in use patterns

2.3.6a  Monitor pedestrian and cyclist numbers and safety on paths to inform future improvements to pedestrian and bicycle paths.

2.3.6b  Consult with users when locating or modifying pedestrian and bicycle paths.
  →  TIP  Local communities have detailed knowledge of user behaviour, needs and preferences regarding path types and locations.
2.4 Pedestrian and bicycle crossings

Pedestrian and bicycle crossings provide points to safely and conveniently cross roads and streets, or other barriers such as motorways, railway lines or waterways. Many crossings are located on paths to activity centres and schools, or at stations, bus or tram stops.

Crossings are either at-grade or grade-separated. At-grade crossings may have road markings and surface treatments, traffic signals and signs, or barrier gates. Grade-separated crossings include pedestrian bridges, overpasses, subway underpasses, or stairs and lifts.

Why is it important?

Pedestrian and bicycle crossings are critical for safe, easy movement around cities and towns. Crossings concentrate pedestrian and cyclist movement to specific locations where they can safely cross the road or barrier. Where crossings are poorly located, say away from movement desire-lines, or with interrupted sightlines to the approaches or crossing, it may be perceived as an inconvenience or safety risk, and not be used.

Related guidance

Element 2.1 Movement network principles
Element 2.3 Pedestrian and bicycle paths

Austroads Guide to Road Design provides technical guidance for crossing design.
2.4 Pedestrian and bicycle crossings

Objective 2.4.1  To maximise pedestrian and cyclist safety and security at crossings

2.4.1a Locate pedestrian and bicycle crossings on direct, desirable routes to destinations such as schools, parks, activity centres and public transport stops, or that link neighbourhoods.
   → TIP People often seek a direct route to their destination, even where this involves dangerous informal crossings of busy roads or railway lines.

2.4.1b Co-locate pedestrian crossings and bicycle crossings, but provide each mode with a separate crossing path.
   → TIP Road crossing points can become congested with waiting and crossing pedestrians and cyclists. Separating the waiting and crossing traffic is a safer practice.

2.4.1c Incorporate lighting on approaches to and at pedestrian and bicycle crossings.

2.4.1d Clearly signpost upcoming crossings and intersections to alert pedestrians, cyclists and drivers.

2.4.1e Maintain clear sightlines on the approach to and at pedestrian and bicycle crossings.
2.4 Pedestrian and bicycle crossings

Objective 2.4.2 To ensure convenient and safe at-grade crossings for pedestrians and cyclists

2.4.2a Locate at-grade crossings on roads where pedestrians and cyclists can be seen by approaching drivers.
   → TIP Drivers must be able to see waiting or crossing pedestrians and cyclists. Crossings should not be located on road curves or hill crests that reduce sightlines to the crossing.

2.4.2b Where both pedestrian or bicycle traffic and vehicle traffic levels are high, provide formal controlled road crossings.

2.4.2c Provide a clear space for pedestrians waiting to cross a road, separate from the through pedestrian path.

2.4.2d Provide pedestrians and cyclists with the shortest practical road crossing distance.

2.4.2e Where roadways are wide, install pedestrian and cyclist refuges such as kerb outstands, traffic islands, and median strips.
   → TIP Kerb outstands and mid-street refuges can shorten the pedestrian crossing distance and allow a staged crossing.

2.4.2f Provide pedestrian refuges of sufficient area, width and length to accommodate the projected numbers of waiting pedestrians and cyclists.
   → TIP Cyclists require refuge space for bicycles of up to 1.8m length, and larger for tandem and child buggy attachments.

2.4.2g Where kerb outstands, traffic islands, or median strips are used at crossings, keep the path clear of obstructions.

2.4.2h Position crossing request buttons for ease of use by both pedestrians and cyclists.

2.4.2i Where pedestrian paths or bicycle lanes cross a left turning vehicle path, provide road pavement detail to alert drivers.
   → TIP A road pavement detail may be a rumble strip, a coloured road surface, or a raised road section.
2.4 Pedestrian and bicycle crossings

Objective 2.4.3  To ensure convenient and safe grade-separated crossings for pedestrians and cyclists

Grade-separated crossings, while safer than at-grade crossings, can involve longer travel distances and crossing times so that pedestrians and cyclists might choose not to use them, and to cross barriers informally at risk to themselves and others.

2.4.3a  Locate grade-separated crossings of rail lines, motorways or waterways on direct, desirable routes to schools, parks, activity centres and public transport stops.

→ TIP  Grade-separated crossings are most suitable where the topography minimises the length of ramps required.

2.4.3b  Locate grade-separated crossings adjacent to active uses that can provide opportunities for informal surveillance of the approach path and the crossing.

→ TIP  An active use may be a busy public space, or a building with people coming and going and with overlooking windows.

2.4.3c  Provide grade-separated crossings with wide straight paths, clear sightlines and adequate lighting.

→ TIP  Paths that are narrow or with few ‘escape route’ options, such as bridges, underpasses, stairways, lifts and walk-throughs, can feel unsafe and can increase opportunities for entrapment.

2.4.3d  Construct grade-separated crossings with a width greater than 3m, with a minimum of 2500mm between handrails, an unobstructed height no less than 2500mm, exit splays of 45 degrees, and clear sightlines for 15m.

→ TIP  see Guideline sources and references for link to Austroads guidance.

2.4.3e  Continue the approach path width for the full length of the underpass or bridge.

Objective 2.4.4  To manage pedestrian and bicycle crossings to respond to local conditions

2.4.4a  Monitor pedestrian and cyclist numbers and safety at pedestrian and bicycle crossings to inform management and improvements.

→ TIP  Management can include adjusting traffic light controls to respond promptly to the presence of pedestrians.

2.4.4b  Consult with users when locating pedestrian and bicycle crossings.

→ TIP  Local communities have detailed knowledge of user behaviour, needs and preferences regarding crossing types and locations.
2.5 Major roads

Major roads accommodate high volumes of motor vehicle traffic including public transport and freight, and have higher design speeds (60–100 km/h). Major roads can have two or more traffic lanes in each direction and may provide for on-street car parking, bus lanes or tram tracks, bicycle lanes, as well as verge space for pedestrian paths, infrastructure and landscaping.

Major roads may be identified as priority routes for public transport, motor vehicle traffic or freight. Larger major roads that are declared arterial roads are managed by VicRoads. Pedestrians and cyclists, while accommodated on these roads, may be given a lower priority in terms of access and amenity while maintaining a high level of safety. A section of an arterial road through an activity centre or school zone may have lowered design speeds.

Why is it important?

Major roads carry large volumes of people and goods over longer distances. While they provide connections between major centres of population, regions and transport terminals, they also function as local area connections for all modes. Major roads sometimes lie within centres of high activity, where they may function as pedestrian priority routes to pedestrian priority places with periods of lowered traffic speed limits for a section of their length.

This element focuses on safe and convenient travel for pedestrians and cyclists on major roads.

This element does not cover design of motorways and railways.

Related guidance

Element 2.1 Movement network principles
Element 2.3 Pedestrian and bicycle paths
Element 2.4 Pedestrian and bicycle crossings
Element 2.6 Public transport on roads
2.5 Major roads

Objective 2.5.1  To ensure the safety and amenity of pedestrians and cyclists along major roads

VicRoads is a referral authority for all landscape treatments and works adjacent to arterial roads.

2.5.1a  Provide separate paths for pedestrians and cyclists travelling beside major roads.

→ TIP  Bicycle paths along major roads may cater for commuter cyclists as well as school children and recreational cyclists. See Element 2.3 Pedestrian and bicycle paths.

2.5.1b  Position pedestrian and bicycle paths to achieve clear sightlines along paths and from the roadway to the path.

→ TIP  Landscape elements such as trees, fences or earth mounds can provide safety and amenity to pedestrians and cyclists travelling alongside major roads so long as road safety and opportunities for informal surveillance are maintained.

2.5.1c  Where major roads are bordered by existing rear fences and walls, provide pedestrian and bicycle paths with clear sightlines to visible exit paths.

→ TIP  Isolated paths bordered by blank walls or fences and with few opportunities for ‘escape routes’ or for informal surveillance from overlooking buildings can feel unsafe and can increase opportunities for entrapment of walkers.

2.5.1d  Provide for noise attenuation and safety treatments on pedestrian and bicycle paths along high noise, high-speed, high-volume major roads.

2.5.1e  Provide safe and direct pedestrian and bicycle crossings on major roads.

→ TIP  See Element 2.4 Pedestrian and bicycle crossings.
2.5 Major roads

Objective 2.5.2  To ensure safe, convenient pedestrian access from neighbourhoods to public transport stops on major roads

2.5.2a  Locate public transport stops and pedestrian approach paths on major roads where there are opportunities for informal surveillance.

2.5.2b  Provide safe and direct crossings of major roads in locations that enable pedestrians of all abilities to reach public transport stops.

→ TIP  See Element 2.4 Pedestrian and bicycle crossings and also see Element 2.6 Public transport on roads.
2.8 Car parking lots

Car parking lots are open areas of land used for parking cars. They can be publicly or privately owned and are generally located in activity centres, at train and bus stations, and other facilities accessed by car. Some higher density residential developments may incorporate private car parking lots.

While many car parking lots are open to pedestrian access, dedicated pedestrian paths are not common. Bicycle movement through car parking lots is generally restricted or not permitted. At times, car parking lots may be used for other purposes, such as a market, or for entertainment or sports activities.

Why is it important?

Car parking lots are important for the convenience of drivers and the viability of some businesses, and in activity centres they provide space for customer parking away from neighbouring residential streets. Where land is freely available and land values are relatively low, car parking lots are often the least costly method of providing parking in urban areas.

Car parking lots should be convenient, pleasant and safe for users. As they occupy large areas of land they should be designed not to create barriers for pedestrians. Measures should be taken to minimise the impact of paved surfaces in radiating heat in summer and generating stormwater run-off. After hours and during low demand periods, car parking lots should be managed to ensure they do not attract anti-social behaviour and are safe for users.

Related guidance

Element 2.1 Movement network principles
Element 5 Buildings
### 2.8 Car parking lots

**Objective 2.8.1** To ensure that car parking lots support the amenity and safety of the local area

| 2.8.1a | Locate larger car parking lots to the rear or side of the buildings they serve.  
> **TIP** Locating larger car parking lots between the street and the building frontage may reduce street amenity and compromise pedestrian access to buildings. |

| 2.8.1b | Provide car parking lots with opportunities to receive informal surveillance from surrounding buildings and spaces.  
> **TIP** Car parking lots bordered by blank walls or fences enclose the area and reduce the opportunity for informal surveillance. |

| 2.8.1c | Where a car parking lot must be located between the building frontage and the street, arrange the parking space to maintain a visual connection between the building and the street.  
> **TIP** A 22m setback allows for two rows of 90 degree parking with single vehicle access way between, landscaping along the street edge and pedestrian paths serving the parking. A setback of up to 22m will maintain a visual connection from the building to the street, whereas greater distances can compromise visual connection. |

| 2.8.1d | Where a car parking lot must be located between the building frontage and the street, arrange the site to allow for future development options. |

| 2.8.1e | Lay out car parking lots to minimise noise, fumes and lighting impacts into adjacent properties. |
Objective 2.8.2  To ensure safe and convenient movement for pedestrians and vehicles in car parking lots

Pedestrians will look for the most direct route to their destination. This preferred direct route, called a desire-line, may cross vehicle lanes and garden beds, putting pedestrians at risk and damaging landscaping.

2.8.2a  In large car parking lots, position dedicated direct paths to take pedestrians from car parking spaces to main building entries.

→ **TIP** If a car park lies between the building entrance and the street, people need a convenient path from the street to the building entrance.

2.8.2b  Locate pedestrian paths as close as possible to anticipated pedestrian desire-lines.

→ **TIP** When direct pedestrian desire-lines are not taken into account, people make their own informal direct path.

2.8.2c  In large, busy car parking lots, orient the parking aisles perpendicular (90°) to the building entrance or other pedestrian destinations.

2.8.2d  Arrange parking spaces to provide effective sightlines for drivers when turning and reversing.

2.8.2e  Provide clear sightlines at entries and exits to car parking lots.
2.8 Car parking lots

Objective 2.8.3 To enhance the amenity and safety for pedestrians and drivers in car parking lots

2.8.3a Provide pedestrian lighting in car parking lots that are used regularly at night.
   → **TIP** Avoid unwanted light spill onto adjacent properties.

2.8.3b Locate trees clear of lighting to allow direct illumination of paths and vehicle lanes.

2.8.3c Provide for vehicle overhang areas to be clear of pedestrian paths, trees or shrubs.
   → **TIP** Pedestrian paths may need extra width to allow for overhang from car bonnets or bumper bars. The normal vehicle overhang allowance is 1m.

2.8.3d Construct a permanent kerb for wheel stops.
   → **TIP** Wheel stops constructed of logs, or kerbs fixed to the pavement with spikes may dislodge under the vehicle causing damage and may also pose a pedestrian trip hazard.
2.8 Car parking lots

Objective 2.8.4 To ensure car parking lots are safe and well maintained

2.8.4a Where the risk of damage from vehicles and vandalism is high, protect vegetation for up to four years from planting.

→ TIP Vegetation can be protected using tree guards, fencing and level changes.

2.8.4b Encourage alternative uses for car parking lots during no or low demand periods.

→ TIP Take advantage of differing periods of demand for car parks by encouraging community activities such as markets and festivals.

Objective 2.8.5 To maximise the environmental performance of car parking lots

2.8.5a Provide shade to parking spaces and pedestrian paths.

→ TIP A tree canopy or a shade structure may be used.

2.8.5b Landscape a minimum of 15 per cent of the car parking surface area.

→ TIP Larger planting areas with a minimum dimension of 2.5m support tree growth. Small planting areas or narrow strips do not provide sustainable planting conditions.

2.8.5c Provide for water harvesting and other on-site water re-use and treatment systems.

→ TIP Water harvesting can provide additional water to plants. See Guideline sources and references.
3.1 Public spaces principles

Public spaces are those areas in the public realm that provide a public use or recreation function, such as parks, plazas and street spaces. Public spaces are generally located on publicly held land, are accessible to everyone and are managed and maintained by councils or other public agencies. Some privately held land provides for controlled public access and use as a public space, such as a building forecourt, a walk-through, a shopping mall or a communal open space. Public spaces are created as part of a land subdivision or by reallocation of land uses in existing urban areas.

Public spaces accommodate a diversity of activities, and provide interest and amenity for people. Critical factors for successful public spaces are their location, size, dimensions and the interfaces with adjacent properties, the paths and arrangement of activities within the space. The area surrounding public spaces also influences how they are used and perceived. A functional system of public spaces offers direct connections to the surrounding pedestrian network and includes through-paths.

Why is it important?

Public spaces are essential for the wellbeing of everyone in a community. They provide opportunity for relaxation, recreation and socialising, and contribute to a neighbourhood’s local character and sense of place. Active, safe and enjoyable public spaces draw people to them.

More than a third of the urban land area is public space, mostly streets. Green spaces such as parks make up the second largest component of public space. Street spaces, plazas, forecourts and squares provide for regular and chance social encounters. Parks and green spaces provide opportunities to relax, participate in active recreation and experience nature. Semi-public and communal open spaces, such as courtyards in apartment buildings, hospitals and education facilities, provide for casual interaction and recreation.

Related guidance

Element 1 Urban structure
Element 2 Movement network
Element 6 Objects in the public realm
### Objective 3.1.1  To ensure all users have convenient and safe access to and through public spaces

| **3.1.1a** | Connect the public space to the surrounding pedestrian network.  
→ **TIP** See Element 1 Urban Structure: guidelines 1.1.5 and 1.1.6 |
| **3.1.1b** | Locate entry paths with clear views to other exits from the public space. |
| **3.1.1c** | Continue pedestrian paths through the public space with direct, logical routes.  
→ **TIP** Pedestrians feel safer when a public space has an obvious through-path, with frequent escape routes linking to surrounding streets. |

### Objective 3.1.2  To achieve attractive and vibrant public spaces

| **3.1.2a** | Include a diversity of activities in public spaces that extend the hours of use.  
→ **TIP** Aim for a public space to be attractive to a diversity of users and at different times of the day. A café, play facilities or community uses can assist in activating public spaces. |
| **3.1.2b** | Locate features towards the centre of the public space to draw people into and through the space.  
→ **TIP** Features could be a large shade tree, fountain or water feature, sculpture, play or performance space. They provide a focus that invites people into the space. |
| **3.1.2c** | Locate spaces for vendor stalls beside the main pedestrian through-paths. |
3.1 Public spaces principles

Objective 3.1.3 To establish and support activity at the edges of public spaces

Edges are often the most populated parts of public spaces. People tend to gravitate to, and occupy, the edges of places because they provide good vantage points to view activities within the space as well as to the surrounding area.

3.1.3a Arrange doors and windows of buildings to overlook adjacent public spaces.

→ TIP Public spaces feel safer and are used more when there are opportunities for informal surveillance of the space.

3.1.3b Arrange the public space to allow direct, clear sightlines from surrounding areas into and through public spaces.

→ TIP An area’s topography will affect the sightlines and ease of movement to and through a public space.

3.1.3c Use the edge of a public space for informal seating.

→ TIP Low walls help define a space and provide informal seating to activate the edge.

3.1.3d Define the boundary or transition between public space and private space without the need for high fences or barriers.

→ TIP A slight change in ground level can provide a boundary definition between public and private space.
### 3.1 Public spaces principles

**Objective 3.1.4** To ensure safety and amenity in public spaces

**3.1.4a** Locate public toilets, play and recreation facilities in accessible and active areas.

→ **TIP** Facilities that are located in secluded out-of-the-way places feel unsafe and users will avoid them. See Element 6 Objects in the public realm.

**3.1.4b** Install low transparent fencing around children’s play areas near busy streets or bicycle paths.

→ **TIP** A low fence between bicycle paths and children’s play areas protects children who may wander on to a street or bicycle path while maintaining its visibility from the street and surrounding areas.

**3.1.4c** Locate lighting to indicate paths and areas for night-time use.

**3.1.4d** Locate utilities infrastructure in a designated zone away from the main pedestrian through-paths and recreation areas.

→ **TIP** Poorly located infrastructure such as service control boxes and telecommunications poles can block views, reduce the usable area and pose a hazard to pedestrians and cyclists.
### 3.1 Public spaces principles

#### Objective 3.1.5  To ensure comfortable and enjoyable public spaces

3.1.5a  Arrange paths, seating and main areas to catch the sun during winter and be shaded during summer.

→ **TIP** Position trees to provide summer shade and shelter.

3.1.5b  Protect public spaces from the strong winds.

→ **TIP** When planting windbreaks or shade trees, avoid creating concealment opportunities.

3.1.5c  Locate seating to provide users with an interesting outlook and views of the space and opportunity to watch passers-by.

→ **TIP** Increase the number of seats in areas that are popular with people. Popular areas are often those with good sightlines of the whole space and its entry points.

3.1.5d  In larger public spaces, install signs with maps to show connections and destinations, location of public facilities, and estimated walking times and distances.

#### Objective 3.1.6  To support a strong sense of place and local character in public spaces

3.1.6a  Select planting and landscape elements that support the existing character or preferred future character of the area.

3.1.6b  Select planting and landscape elements that engage the senses.

3.1.6c  Integrate locally relevant urban art

→ **TIP** Urban art that people can interact with is popular and can draw people to a space.
Objective 3.1.7  To ensure public spaces are well used and maintained

A number of agencies are responsible for managing public spaces. Any one public space may have multiple agencies and organisations with different responsibilities, leading to complexity in coordination of development and management.

3.1.7a  In large, complex public spaces, establish a committee of management with responsibility to coordinate all aspects of the public space management.

3.1.7b  Establish a program of ongoing events and activities for a wide range of users.

→ TIP  Events and activities can include markets, performances, displays or community services.

3.1.7c  Establish a maintenance program for public spaces prioritising prompt identification, removal and repair of any signs of damage and misuse.

3.1.7d  Provide permeable ground surfaces, where possible, for absorption of rainwater and reduction of stormwater run-off.
3.2 Street spaces and plazas

Street spaces are that part of the street used for social purposes, such as a widened footpath or a pedestrian-only mall. Plazas range from a building forecourt to a large city square. A plaza is often bordered by buildings or streets.

Most street spaces and plazas are paved, and can include trees and other planting, but they are distinguished from parks. The spaces may have vehicles running adjacent to the pedestrian zone, be a shared zone, or may be free of vehicles. Some street spaces operate for specific periods of the day or week to accommodate different use patterns. While street spaces are generally publicly owned and managed, plazas may be publicly or privately owned but still open to the public at all hours.

Why is it important?

Streets are the predominant and most frequently used public spaces in any city. Street spaces and plazas link with the movement network, allowing people to use them as through routes as well as places to linger and socialise. They usually have places for people to sit, eat their lunch, find some sun or shade, get out of the cold wind or rain, chat with friends or watch their children play. They also provide opportunities for people to observe the world around them.

Related guidance

Element 2.2 Pedestrian priority streets
Element 3.1 Public spaces principles
Element 6 Objects in the public realm
3.2 Street spaces and plazas

Objective 3.2.1 To ensure attractive and functional street spaces and plazas

3.2.1a Locate a street space or plaza where pedestrian volumes will be high.

→ **TIP** High pedestrian numbers help the street space or plaza to feel safe and attractive.

3.2.1b Allow sufficient space in the street space or plaza to accommodate activities and seating, in addition to the space for pedestrian through-paths.

→ **TIP** Beware of making the street space or plaza too big. A bit of crowding at busy times is acceptable but an empty space may discourage people.

Objective 3.2.2 To ensure convenient and safe access to and through plazas

3.2.2a Arrange through-paths across a plaza on the same level as the surrounding pedestrian network.

→ **TIP** Level changes, steps and obstructions reduce accessibility and hinder way-finding, discouraging pedestrians from entering a plaza.
Objective 3.2.3 To establish and support activity around the edges of street spaces and plazas

A street space or plaza performs well when bordered by pedestrian priority streets and buildings with a high level of activity that open on to the space.

3.2.3a Provide an active front to buildings on at least one side of the street space or plaza.
   → TIP Buildings with uses that engage with the street, such as cafes, provide opportunities for interaction with and use of the street space.

3.2.3b Where possible integrate shelters and awnings with the facades of buildings that are facing street spaces and plazas.
   → TIP Integrating shelters, by attaching them onto the building wall, allows the street spaces to remain uncluttered. Building Code of Australia sets out design standards for building projections beyond the street alignment. See Element 5.1 Buildings in activity centres, and Element 6 Objects in the public realm.

3.2.3c Enable adjacent businesses to use the street space for café furniture and to display merchandise.
   → TIP Commercial use of a street space may require local standards to be set to ensure obstacle free paths and safe pedestrian movement.

3.2.3d Provide a transition zone between traffic lanes and a street space or plaza.
   → TIP A transition zone may be landscaped verge or row of on-street car parking.
3.4 Communal open spaces

Communal open space is an area within a private site providing for informal recreation activities for common use by building occupants and, in some cases, visitors. Communal open space is often incorporated into higher density residential developments, education facilities, supported residential facilities, health care facilities and hospitals, or commercial buildings. They can include roof terraces, courtyards, contemplation gardens, atriums, walled gardens, playgrounds, play spaces and dog gardens. Communal open space may comprise paved areas, grass, gardens, shelters and seating. Depending on the intended user, it may also include pools, garden plots and barbecues.

Why is it important?

Access to well-designed communal open space is important for the wellbeing of building occupants, especially residents of higher density residential buildings. Communal open space provides opportunities for relaxation, socialising and to enjoy outdoors. Communal open space can also support natural systems and habitat.

Related guidance

Element 3.1 Public spaces principles
Element 5 Buildings
Element 6 Objects in the public realm
3.4 Communal open spaces

**Objective 3.4.1** To ensure communal open space is accessible and functional

Communal open spaces need to be of an adequate size and in an accessible location to enable building occupants to use them. Remote, small or uncomfortable spaces are rarely used, and may become neglected or unsafe.

**3.4.1a** Locate communal open space to be convenient and accessible to building occupants.

**3.4.1b** Provide communal open space of a size that accommodates a wide range of activities and uses appropriate for the building occupants.

**3.4.1c** Lay out communal open space to create informal surveillance opportunities within the space and from adjacent buildings.

→ **TIP** Dwellings that have an outlook toward communal open space provides opportunities for informal surveillance of the space. This arrangement should, however, maintain the privacy and security of residents in their homes.

**3.4.1d** Design communal open space to be usable in a range of weather conditions and at all times of the year.

→ **TIP** When designing communal open space, take into account orientation of the space for optimum winter solar access and summer shading, shelter from wind and rain and providing all-weather ground surface materials.
3.4 Communal open spaces

Objective 3.4.2 To support a safe and enjoyable communal open space for its intended users

3.4.2a Include a place where adults and children can gather and socialise.
   → TIP In higher density residential buildings, simple solutions can attract greater use. Arranging tables and seating can encourage informal gatherings while people watch their children play.

3.4.2b Provide seats and tables to cater for large gatherings of people.
   → TIP A large table can accommodate resident gatherings and support social engagement.

3.4.2c Provide lighting in communal open space to support safe movement and evening use.
   → TIP Avoid light spill to adjacent sensitive uses.

3.4.2d Provide landscape areas with sufficient space and soil volume for trees to grow.

3.4.2e Incorporate containers for trees and shrubs where free ground with sufficient soil volume is not available.
   → TIP Opportunities for planting may be limited on balconies and roof gardens and over underground structures such as car parks.

Objective 3.4.3 To ensure the communal open space protects the amenity for adjacent sensitive uses

3.4.3a Locate facilities such as driveways, foyers and barbecue areas to minimise noise, fumes and lighting impacts into sensitive uses in adjacent properties.

Objective 3.4.4 To ensure communal open spaces are well maintained

3.4.4a Establish a regular maintenance program for communal open space.
4.4 Railway corridor environs

Railway corridor environs focuses on land and activities adjacent to the railway operating corridor. Along the length of the corridor, adjacent land may accommodate a variety of uses including streets and roads, public open space, residential or commercial development.

Railway corridors contribute to an effective movement network. Railway corridors may carry metropolitan passenger, regional passenger or freight trains. Railway corridor crossing points channel and concentrate pedestrian, bicycle and vehicle movement to specific locations.

Railway crossing points are used by both commuters and the general public. Crossing points can be existing at-grade or new grade-separated crossings. Grade separated crossings are either by an underpass (subway) or an overpass (footbridge). The design of new transport routes and new developments, where applicable, must provide for grade separation at railway crossings except with the approval of the Minister for Public Transport.

Why is it important?

Some railway corridors, due to their length and widely-spaced safe crossing points, can be a barrier to movement in the wider area. Space adjacent to the railway operating corridor, if safely separated, can provide opportunities for linear open space, and pedestrian and bicycle paths. Railway stations and crossing points along the corridor can be locations for more intense activity.

Some train operations can result in noise and vibration effects on nearby properties, especially where a freight service operates or the track curves or climbs, or where there is a signalised level crossing. Development within the railway corridor environs should consider the potential amenity impacts of the railway operating corridor, and constraints on public access.

This element provides design guidance for the immediate surroundings of railway corridors. It does not include design considerations within the operational rail corridor. The engineering, servicing or management issues of the public transport modes are guided by other appropriate authorities. See also Public Transport Guidelines for Land Use and Development (Department of Transport 2008) and also the Guideline sources and references for a list of technical guidance.

Related guidance

Element 2 Movement network
Element 4.1 Public transport environs principles
4.4 Railway corridor environs

Objective 4.4.1  To enhance connectivity and access in railway corridor environs

4.4.1a Provide conveniently located grade separated pedestrian and bicycle crossings across railway corridors, motorways and other natural barriers, to connect neighbourhoods and key destinations.

→ **TIP** In urban areas, the crossing location and frequency should be informed by local circumstances and need.

→ **TIP** The design of transport routes at new developments must provide for future grade separation at railway crossings except with the approval of the Minister for Public Transport.
### 4.4 Railway corridor environs

#### Objective 4.4.2  To enhance the amenity and safety for adjacent uses in the railway corridor environs

Railway corridors are not public spaces. However, as there is no requirement on the railway operator to fence the railway track area, the railway operating corridor may sometimes appear as quasi-public space, in particular where it is adjacent to a public road or actual public space. Development adjacent to a rail corridor should include suitable fencing to prevent access to the corridor. Advice from the rail track authority is to treat rail land as private property, unless advised otherwise by the authority.

| 4.4.2a | Where a railway operating corridor serves only metropolitan passenger services, provide a street between the railway operating corridor and the surrounding area, to provide an active frontage.  

→ **TIP** A street is not an effective noise buffer, but metropolitan services generally make less noise than diesel freight trains.

| 4.4.2b | Where a railway operating corridor serves freight or regional passenger services, design buildings or structures to provide a noise buffer for adjacent buildings and the surrounding area.  

→ **TIP** While buildings designed to provide a noise and vibration barrier are appropriate in freight or regional passenger corridors, sound walls, if well designed, may also be a solution.

| 4.4.2c | Where a private lot abuts a railway corridor, set buildings back from the boundary with the railway property.  

→ **TIP** Avoid building to the lot boundary on the railway land interface. Railway property is not usable as a public way or for providing access to daylight and ventilation in adjacent buildings. Set buildings a sufficient distance back from the boundary to provide access for maintenance and repairs to buildings and services, and to allow for light and ventilation access for the building.

| 4.4.2d | Where a building wall faces a railway corridor, design the building facade to dissipate noise.  

→ **TIP** Faceting the building wall, or using a sound-absorbing surface finish can reduce noise transmission into bordering buildings.

| 4.4.2e | Where a building wall or fence interfaces a railway corridor, use wall and fence finishes that resist graffiti and vandalism.  

→ **TIP** While vegetation on walls discourages graffiti, maintaining the plantings is an additional management cost and responsibility.
4.4 Railway corridor environs

Objective 4.4.3 To ensure buildings and uses adjacent to the railway corridor support safe railway operations

4.4.3a Locate trees and planting along railway corridors to maintain clear sightlines for train drivers, and to ensure branches do not fall onto the rail infrastructure.

→ TIP Maintaining clear sightlines between an adjacent path and the rail operating corridor also ensures that pedestrians and cyclists can see approaching trains.

4.4.3b Use visually non-reflective surfaces on buildings and structures facing the railway corridor to avoid glare and train driver distraction.

4.4.3c Shield the railway operating corridor from light spill from adjacent properties to avoid train driver distraction.

→ TIP Train driver distraction, caused by bright lights, colours or shiny surfaces, can pose safety risks to train operations.

Objective 4.4.4 To ensure effective place maintenance in railway corridor environs

4.4.4a Where development or works are proposed on land abutting a railway corridor, consult with railway agencies early in the planning process.

→ TIP See Guideline sources and references, for rail environs responsible authorities and agencies.

4.4.4b Establish a place management agreement that identifies management and maintenance responsibilities and processes.

→ TIP Railway corridor environs are complex areas to manage. A place management agreement and place maintenance processes can provide for coordination and consistency.
5.1 Buildings in activity centres

Buildings in activity centres accommodate a wide range of uses, such as living, working, shopping and services. Buildings in these locations may be larger than those in surrounding neighbourhoods, take up more of the site and be built to the front and side boundaries. They may incorporate a mix of uses that mean people are present at different times of the day.

Depending on the location within the activity centre, a building may be an intense development, it may provide a transition to more sensitive uses, or it may blend in with the surrounding area. Buildings in activity centres often accommodate a variety of uses and over time, these uses may change. A building’s design should consider future changes in use and internal layout.

Why is it important?

Buildings, together with the streets and public spaces, form the city. Buildings make a significant contribution to a city’s sense of place, and its comfort and liveability. The physical form and character of buildings shape the public spaces of a city. The activities buildings accommodate will have an effect on the surrounding area. Importantly, larger or complex buildings make a significant contribution to their setting. Buildings in activity centres, whether private or public, contribute to the vitality of the street and public spaces.

Related guidance

Element 1.2 Activity centre structure
Element 2.2 Pedestrian priority streets
Element 3.2 Street spaces and plazas
Element 4 Public transport environs
5.1 Buildings in activity centres

**Objective 5.1.1** To ensure the building scale and form supports the context and preferred future character of the activity centre

In activity centres, buildings define the street spaces, focus views and provide a sense of enclosure for public spaces.

5.1.1a Locate and shape the building to accommodate local topography and natural and cultural features of the site.

5.1.1b Locate and shape the building to protect view corridors from streets and public spaces toward landmarks.

- **TIP** An important function of the public realm is to celebrate elements of value to the community. View corridors from streets and public spaces to significant landmarks, such as a memorial or a natural feature, are highly valued by the community.

5.1.1c Shape the building scale and form to support the existing character or the preferred future character of the area.

- **TIP** The building silhouette against the sky can make a significant contribution to the character of the area.

5.1.1d Use the building height and setbacks to frame the street space as a public space.

- **TIP** Building form and placement can effectively widen a narrow street or enclose a wide street. See Element 2.2: Pedestrian priority streets.

5.1.1e Where the street proportions and character are strongly defined, align the building frontage with existing front setbacks.

- **TIP** Street character may also be defined by heritage buildings and landscape settings.

5.1.1f In retail and commercial mixed-use areas, place the building frontage on the front lot line.
5.1 Buildings in activity centres

5.1.1g Shape the building form and detail to reinforce important street corners.

→ TIP Not all corners are important. A strategic planning process can identify important corners.

5.1.1h Set back upper levels of tall buildings or use a podium and tower form to create a pedestrian scale at street level.

→ TIP A podium with a tower set back from the street allows greater daylight access into the street and wider views of the sky and reduces wind turbulence at street level. A strategic planning process or built form analysis can identify appropriate street wall heights.

Objective 5.1.2 To ensure the activity centre provides a graduated transition between different building scales and uses

5.1.2a Provide a transition in scale from larger buildings to adjacent areas of smaller scale built form.

→ TIP A larger building can transition to a lower scale neighbour by placing smaller scale buildings at the interface, or by stepping down the building towards the interface edge.

5.1.2b Define the boundary or transition between public space and private space without the need for high fences or barriers.

→ TIP A slight change in building level can provide a boundary definition between public and private space.
5.1 Buildings in activity centres

Objective 5.1.3 To ensure buildings in activity centres provide equitable access to daylight and sunlight

5.1.3a Locate and arrange the building to allow daylight and winter sun access to key public spaces and key pedestrian street spaces.

→ **TIP** A strategic planning process can identify and establish key public spaces.

5.1.3b Allow sufficient distance between buildings to allow access to daylight for neighbouring windows.

→ **TIP** The higher the surrounding buildings the further they may need to be separated.

5.1.3c Protect daylight and sunlight access to the private and communal open space of adjacent dwellings.
Objective 5.1.4  To minimise adverse wind effects caused by buildings in activity centres

5.1.4a  Orient large buildings to minimise wind effects at street level and on adjoining properties and public spaces.

→ **TIP**  Winds from a certain direction (such as the west) may be dominant, so avoid tall wall surfaces which would catch wind and cause down draughts.

5.1.4b  Detail the building façade to minimise wind effects on streets and public spaces.

→ **TIP**  The shape and surface of a building can reduce wind turbulence at street level. Technical analysis of the wind and turbulence effects of tall buildings on adjacent public spaces can inform building design.

5.1.4c  As part of a building’s design, install continuous weather protection for pedestrian priority streets and public spaces.

→ **TIP**  Awnings provide protection from sun, wind and rain at street level. The Building Code of Australia sets out design standards for building projections beyond the street alignment. Where a building projection is over an Arterial Road Reserve, approval from VicRoads is required.
5.1 Buildings in activity centres

Objective 5.1.5 To maximise safety through informal surveillance of streets and public spaces from within buildings in activity centres

5.1.5a Arrange windows of buildings to overlook adjacent streets and public spaces.

5.1.5b Provide building entries and transparent windows to the street frontage.

→ TIP Transparency need not be complete. Privacy and views need to be balanced and be appropriate to the building use.

5.1.5c Where security covering to windows is needed, install open-grill type shutters.

→ TIP People prefer to walk along streets where there is activity, visual interest and a perception of being visible from nearby windows. People tend to avoid streets with long blank walls or solid security shutters that contribute no interest or activity at street level.

5.1.5d Use low-height or semi-transparent front fences to assist informal surveillance of the street.

5.1.5e Where front fences are more than one metre in height, provide a minimum of 50 per cent transparency.

→ TIP Front fences at street level that are low, open or partially transparent also create an impression of openness on the street. Where a fence is needed to minimise noise intrusion, consider using a solid, transparent material.
5.1 Buildings in activity centres

5.1.5f Limit wall recesses along the street edges of buildings to less than 300mm deep to avoid their use as concealment places.
   → TIP Wall recesses deeper than 300mm can provide potential hiding places.

5.1.5g In mixed-use buildings, provide a compatible mix of activities that attract people after business hours.
   → TIP Mixing uses in buildings, with retail and other commercial uses at street level, and residences on upper floors, provides activity during the day and evening.
5.1 Buildings in activity centres

Objective 5.1.6 To ensure buildings in activity centres connect to the movement network

5.1.6a Locate pedestrian entries to buildings on the pedestrian network.
→ TIP Entries should be clearly visible from footpaths along the street.

5.1.6b Emphasise pedestrian entries with prominent design features, signage or landscape treatments.

5.1.6c Provide visitor bicycle parking near to pedestrian entries to buildings.

5.1.6d Arrange vehicle entries to buildings to allow convenient, safe and efficient vehicle access to the street network.
→ TIP Reducing vehicle crossovers on footpaths, ensuring vehicles can enter and exit in a forward direction and having clear sight lines enhances both pedestrian and driver safety.

5.1.6e Arrange vehicle entries to minimise the number of vehicle crossovers on pedestrian paths.
→ TIP See Element 5.4 Car parking structures.

5.1.6f Locate vehicle and service access to the rear or side of the building.
→ TIP Locating vehicle access away from the street frontage supports safe active pedestrian streets. See Element 2.8 Car parking lots and 5.4 Car parking structures.

5.1.6g Separate the pedestrian entries from the vehicle entries to buildings.
5.1 Buildings in activity centres

**Objective 5.1.7** To ensure the building facade detail supports the context or preferred future character of the activity centre.

Larger buildings are more visible from the street and from a distance. Their facades can contribute to the character of the area and reinforce place identity.

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**5.1.7a** Arrange building elements such as roofs, balconies, windows, doorways and cladding materials to contribute to the preferred future character of the area.

→ **TIP** An overall façade composition may use, for example, proportion, contrast, repetition, or alignment of the building elements to create an identity for the building.

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**5.1.7b** Where a building has a solid external wall facing a street or public place, detail the walls to provide an interesting appearance.

→ **TIP** Detail on a building’s external walls may include, for example, decorative cladding and materials, artwork, signage or graphics.

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**5.1.7c** Incorporate lighting of walls facing streets and public spaces to contribute to lighting of streets.

→ **TIP** Wall lighting can also show off the building façade at night.

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**5.1.7d** Shield from view or remotely locate mechanical plant, unless it forms an integral part of design.

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**5.1.7e** Locate and arrange utility service installations to minimise their impact on the building’s active street frontage.

→ **TIP** People prefer to walk along streets where there is activity, visual interest and a perception of being visible from nearby windows. People tend to avoid streets with long blank walls that contribute no interest or activity at street level.
5.1 **Buildings in activity centres**

**Objective 5.1.8**  To achieve sustainable buildings in activity centres

5.1.8 a  Use durable, sustainable and attractive materials that will minimise maintenance and contribute to the character of the area.

→ **TIP** The use of specific materials should be based on local precedent or functional requirements.

5.1.8 b  Adapt and re-use existing buildings, where practical.

5.1.8 c  Lay out the building structure and internal spaces to allow future adaptation to other uses.

→ **TIP** High ground floor ceiling heights and provision for multiple entry points support flexible re-use of a building. Car parks should also have ceiling heights and flat floors to facilitate future conversion to other uses.

5.1.8 d  Collect and use stormwater and recycled water for landscape irrigation, toilet flushing and cleaning.

→ **TIP** Water reuse systems need to be planned into a building at an early stage. See Guideline sources and references.

5.1.8 e  Provide for efficient storage, separation and removal of waste and recycled materials from buildings.

→ **TIP** For links to advice on waste management and disposal planning, see Guideline sources and references.
5.3 Large format retail premises

Large format retail premises are mostly free-standing buildings or complexes with a single large building footprint and associated infrastructure. They are often single-level or low-rise buildings and they may include large at-grade car parking lots or car parking structures.

They can be shopping centres, supermarkets, restricted retail premises or department stores. Large format retail premises differ from other large buildings with regard to visitor patterns, goods delivery requirements, and goods display practices. They are often located in high visibility places, for example at major road intersections or adjacent to highways that are highly accessible by car.

Why is it important?

Large format retail premises are a part of modern living and contribute to the mix of uses in activity centres. When well integrated physically and functionally into their surrounding area, they draw many customers, enhance the viability of nearby businesses, increase street activity and provide diversity and choice for customers. To achieve this integration they require an adequate level of private vehicle, public transport and pedestrian accessibility, safety and amenity.

Related guidance

Element 1.2 Activity centre structure
Element 1.3 Large redevelopment site structure
Element 2.8 Car parking lots
Element 2.3 Pedestrian and bicycle paths
Element 5.1 Buildings in activity centres
Element 5.4 Car parking structures
5.3 Large format retail premises

Objective 5.3.1 To support an active frontage interface of large format retail premises with the street

The level of active frontage depends on the presence of a pedestrian entry point as well as a level of clear window area. The appropriate level of active frontage will be influenced by the existing or preferred future character of the street. See Glossary: Active frontage.

5.3.1a Locate main pedestrian entrances and entry paths in prominent locations where they can be seen from the street.

5.3.1b Where a building is located on the front lotline, provide a level of clear window that allows opportunities for informal surveillance of the street from within the building.

→ TIP The street frontage of a retail building that has areas of clear window provides opportunities for informal surveillance of the public realm. As well, it allows the public to see the activity within and to see displayed goods.

5.3.1c Where a large format retail premises requires a solid external wall or a setback adjacent to the street frontage, maintain a visual connection and a walkable distance from the building entry to the street.

→ TIP If a wall is set back from the street, allow the future opportunity for smaller scale retail or community activities along the frontage.
Objective 5.3.2 To support safe and direct pedestrian and cyclist access to large format retail premises

**5.3.2a** Provide convenient and direct pedestrian and cyclist access from a large format retail premises to public transport stops and to the surrounding area.

**5.3.2b** Locate main pedestrian entrances on direct pedestrian paths from the surrounding area.

**5.3.2c** Locate access points for loading bays and waste collection, and site storage areas away from pedestrian priority streets, paths and residential areas.

**5.3.2d** Where a large format retail premises is in an activity centre, locate the main customer car parking facility away from the main street frontage.

> **TIP** Large car parking lots located between the street and a large format retail premises can detract from the amenity of the street and create a barrier to the surrounding area. See Element 2.8 Car parking lots and also Element 5.4 Car parking structures.
5.3 Large format retail premises

Objective 5.3.3 To integrate the built form of large format retail premises into activity areas and their surrounding neighbourhoods

5.3.3a Arrange the building form and the facade detail of large format retail premises to respond to the local context and enhance the public realm.

5.3.3b Where the large format retail premises is adjacent to a lower scale neighbourhood, provide a transition in scale to the surrounding streets and residential areas.

   TIP Stepping the building down at the edges can mediate differences in scale between a taller building and its neighbours.

5.3.3c Use landscape treatments to reduce the visual impact of blank walls and large areas of car parking.

   TIP Avoid landscaping that blocks views into and out of a building, or across the site, or that provides a concealment opportunity.

Objective 5.3.4 To support the safety and amenity of the area around large format retail premises

5.3.4a Maintain windows in the large format retail premises clear of visual obstructions to the outside to enable informal surveillance of the public realm.

5.3.4b Manage landscaping to maintain sightlines into and out of a large format retail premises, and across the site.

   TIP Overgrown landscaping can block sightlines and provide concealment opportunities.
6.3 Trees and planting

Planting trees, shrubs and ground covers in urban areas contributes visual interest and microclimate moderation. Trees can provide shade, shelter, and cool air pockets; they can screen an unsightly view, act as landmarks, or provide a sense of enclosure with leafy walls and ceilings.

Trees are frequently the most important element for setting the character of an area. A tree-lined street can be beautiful even when the architecture is mundane. Trees lining streets and paths in parks make the space comfortable and desirable. Places with trees tend to attract more people. A landscape changes with the seasons and gives people a sense of passing time and dynamic vitality.

Related guidance

Element 6.1 Principles for objects in the public realm
**Objective 6.3.1**  To select trees and planting that are fit-for-purpose

In selecting plants, have regard to the landscape heritage, size of plants at maturity, microclimate and soil conditions.

**6.3.1a** Select lawn types that are suitable for sitting on and for recreation.

→ **TIP** If a public space is heavily trafficked then a hard-wearing surface may be more suitable. Synthetic lawn surfaces may be an option.

**6.3.1b** Use drought-resistant plant species when irrigation is not available.

**6.3.1c** Use plant species appropriate to the available root space.

**6.3.1d** Select deciduous tree species where winter sun is desired.

**6.3.1e** Select dense, canopied tree species where summer shade is desired.

**6.3.1f** Select evergreen species with dense foliage where wind protection or screening is needed.
6.3 Trees and planting

Objective 6.3.2  To ensure trees and planting contribute to local identity and context

6.3.2a Select trees and planting appropriate to the cultural context and local identity.

6.3.2b Provide trees and planting that engage the senses.
   → TIP Plants that change appearance with the seasons provide a dynamic experience and enhance a sense of place. The sounds and scents of plantings are also important considerations.

6.3.2c Select trees in keeping with the scale of the street or public space.

6.3.2d Position trees and planting to define a street or path.
   → TIP Trees placed between a pedestrian path and a traffic lane can provide both psychological and physical protection from vehicles.

6.3.2e In wide streets or large open spaces, position trees to form a canopy and enclose the space.
6.3 Trees and planting

Objective 6.3.3 To ensure trees and planting support the safety and amenity of public space

6.3.3a Select tree species with clear trunks, and no branches or foliage below 2500mm in height.

→ TIP Foliage free zones between 600mm and 2500mm from the ground allow clear sightlines and eliminate opportunities for concealment.

6.3.3b Select shrub and ground cover plantings to be no more than 600mm in height.

→ TIP In areas behind a non-climbable fence or screen, plantings may be greater than 600mm, as the fence provides protection.

6.3.3c Position trees and planting to allow clear sightlines along streets and across the different mode paths.

6.3.3d Position trees away from overhead wires and public lighting to limit overshadowing of public lighting and interference with overhead wires.

→ TIP This will require coordination between utilities agencies and local councils.

6.3.3e Where protective barriers are required around landscaping, combine with other street furniture such as seating, bicycle posts, or public artwork.

6.3.3f Provide tree grates that are flush with the surrounding pavement surface.

→ TIP Making grates flush with the pavement surface avoids trip hazards and allows the potential for water gathering. Porous pavements may be an effective alternative.
Objective 6.3.4  To ensure trees and planting are managed and maintained

6.3.4a  Manage ongoing maintenance and replacement of trees and planting according to a precinct-wide plan.
   ➔ TIP  When undertaking street or path works, replant missing trees.

6.3.4b  Manage street planting to maintain clear sightlines along paths and streets.
   ➔ TIP  Landscaping along roads, streets, pedestrian and bicycle paths should not block sightlines for drivers, pedestrians or cyclists.

6.3.4c  Maintain vegetation clear of lighting to allow direct illumination of paths.

6.3.4d  Maintain trees clear of overhead wires.
6.4 Barriers and fences

Barriers such as bollards and fences can define boundaries and protect people from traffic hazards and level changes. They also protect trees and shrubs from people and vehicles. A barrier may be made as bollards, screens, rails, fences, kerbs and walls. Barriers and fences can provide an opportunity for public art or to communicate local stories. They may also provide opportunities for seating.

Related guidance

Element 6.1 Principles for objects in the public realm
6.4 Barriers and fences

**Objective 6.4.1** To ensure barriers and fences support amenity and safety

6.4.1a Locate bollards to allow free pedestrian movement, while controlling vehicle access to an area.

→ **TIP** Use bollards where the purpose is to filter movement modes. Bollards may be removable or permanent. Bollards are preferable to continuous a fence or barrier, as they allow choice of movement for pedestrians and cyclists, while limiting vehicle access.

6.4.1b Position bollards to be highly visible to pedestrians, drivers and cyclists and of a height to avoid injury.

→ **TIP** Bollards should not be used in place of hazard markers. Use specific hazard marker signs.

6.4.1c Use highly visible barrier materials for both day and night visibility.

→ **TIP** People with vision impairment must also be able to detect barriers. Tactile ground surface indicators may also be needed.

6.4.1d Set back cafe screens or barriers an optimal 800mm (minimum 500mm) from the kerb, leaving a 3000mm clear path (minimum 1500mm).

→ **TIP** Cafe screens can define a street cafe area, protect customers from wind and provide psychological protection from vehicle traffic, but they can also block pedestrian movement on a footpath. Screens may be fixed in position or movable.

6.4.1e Provide barriers and fences with a non-injurious top rail detail.

→ **TIP** Low level fences with pointed prongs are a hazard and have resulted in accidental injuries.
6.4 Barriers and fences

Objective 6.4.2 To ensure that barriers and fences contribute to the character of the area

6.4.2a Use a style, scale and materials for barriers that contribute to the existing or desired future character of an area.

→ TIP Front fences can be a strong visual element, especially in higher density residential precincts, and contribute significantly to the character of the street.

Objective 6.4.3 To ensure front fences support informal surveillance to the street and public spaces

6.4.3a On a property boundary abutting a street frontage or public space, use fence types that are low height or partially transparent.

→ TIP Low or transparent fences provide opportunities for informal surveillance of streets and public spaces.

Objective 6.4.4 To ensure temporary barriers and fences support the safe use of public spaces

6.4.4a Implement a process to manage placement of temporary barriers and fences in public places by public and private entities.

→ TIP Temporary barriers can pose a hazard to pedestrians and cyclists at night.
6.4 Barriers and fences
6.5 Lighting

Lighting performs a number of functions, from supporting way-finding, orientation and safe movement at night to providing a decorative effect for building facades, landmarks and paths. Lighting systems can be large-scale and utilitarian or small scale and ornamental. They may use overhead lamps, bollards, up-lights, bulkhead or veranda lighting, feature and facade illumination. Shop display lighting can also contribute to overall public realm lighting levels.

Lighting is critical to creating a public realm that is safe and inviting for users. Well-located lighting can enable the use of public spaces for active recreation during the evening, especially in winter. These guidelines focus on public space lighting design for safety and amenity.

Related guidance

Element 6.1 Principles for objects in the public realm
### Objective 6.5.1
To ensure lighting supports night-time social and recreational activity, amenity and safety in the public realm

Path and street lighting should, as a minimum, meet Australian Standard 1158 Road Lighting.

<table>
<thead>
<tr>
<th>Objective 6.5.1</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>6.5.1a</td>
<td>Locate lighting for safe travel and way-finding along pedestrian and bicycle paths, and to emphasise crossings, landmarks and destinations.</td>
</tr>
<tr>
<td>6.5.1b</td>
<td>Light only those public space areas and paths intended for night use.</td>
</tr>
<tr>
<td>6.5.1b TIP</td>
<td>Absence of lighting can identify areas to avoid.</td>
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<tr>
<td>6.5.1c</td>
<td>Provide lighting on all pedestrian and bicycle path approaches to and through activity centres.</td>
</tr>
<tr>
<td>6.5.1c TIP</td>
<td>In activity centres, lighting levels can be higher than surrounding areas.</td>
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<tr>
<td>6.5.1d</td>
<td>Where pedestrian and bicycle paths pass through public open space, light the paths to the same level as surrounding streets.</td>
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<tr>
<td>6.5.1e</td>
<td>Where a path passes through an underpass, light the approach and exit path to the same level as the underpass.</td>
</tr>
<tr>
<td>6.5.1e TIP</td>
<td>Long underpasses and tunnels may require lighting during the day.</td>
</tr>
<tr>
<td>6.5.1f</td>
<td>Locate lighting at points of potential pedestrian-vehicle and pedestrian-bicycle conflict.</td>
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<tr>
<td>6.5.1g</td>
<td>Locate lighting in social spaces used at night for recreation, cafes or events.</td>
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<tr>
<td>6.5.1h</td>
<td>Provide lighting at public transport stops, pedestrian refuges and median openings, bicycle parking hoops, way-finding signs, and payphone cabinets.</td>
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<tr>
<td>6.5.1i</td>
<td>Light the interiors of public transport shelters to the same level as surrounding area and approach paths.</td>
</tr>
<tr>
<td>6.5.1i TIP</td>
<td>Consistency between lighting at public transport stops and surroundings will mean surroundings do not seem dark by contrast.</td>
</tr>
<tr>
<td>6.5.1j</td>
<td>Install lighting at building entrances and car parking vehicle exits.</td>
</tr>
</tbody>
</table>
### Objective 6.5.2  To ensure lighting contributes to local character and cultural values

#### 6.5.2a
Use external lighting to enhance the appearance of a building or landscape feature.

#### 6.5.2b
Integrate lighting with signs, landscaping and other public space elements.

### Objective 6.5.3  To ensure lighting aids night-time way-finding

The overall lighting level in public spaces may comprise light from a combination of sources including street lights, signs, adjacent shops and buildings.

#### 6.5.3a
Provide consistent, continuous lighting levels along paths.

→ **TIP** Infrequent large, single-point lights can result in glare and unilluminated patches, and are detrimental to people with visual impairment.

#### 6.5.3b
Use lighting types that minimise distortion and glare, and maximise colour recognition of objects and surfaces.

→ **TIP** White light lamps provide better colour rendition and object recognition.

#### 6.5.3c
Place lighting poles and lamps away from tree canopies, verandas and overhead wires.

→ **TIP** Where a street is narrow, light fittings may be fixed to building walls or suspended from catenary wires to minimise pedestrian path obstruction.

#### 6.5.3d
Direct the path and activity lighting downwards to illuminate the immediate surrounds.

→ **TIP** Lights placed at eye level can prevent pedestrians and cyclists from seeing beyond the light source.

#### 6.5.3e
Where lighting bollards are adjacent to pathways, direct the light beam downwards.

→ **TIP** Unhooded light bollards can cause glare for pedestrians, limiting visibility into the distance.

#### 6.5.3f
Provide lighting levels that enable recognition of an approaching person’s face from 10–15 metres away.

→ **TIP** Strong light sources produce deep shadows and can reduce local visibility and surveillance.
### Objective 6.5.4  To ensure sensitive uses adjacent to public spaces are protected from light spill

**6.5.4a** Control unwanted light spill to sensitive uses from public space lighting.

→ **TIP** Avoid lighting that shines upwards to limit general light pollution.

**6.5.4b** Provide a gradual transition between bright-lit and dimmer-lit areas.

→ **TIP** Over-lighting an area can create the impression that surrounding places are under-lit.

### Objective 6.5.5  To ensure effective management and maintenance of public space lighting

**6.5.5a** Establish a standard design for public space lighting elements.

→ **TIP** Consistent use of standard details and parts supports efficient management and maintenance.

**6.5.5b** Use low-energy, long-life, high-colour rendering index, glare-controlled light fittings.

**6.5.5c** Maintain established trees foliage clear of path lighting.