



# HEALTHY SPACES & PLACES

A national guide to designing places for healthy living

## DESIGN PRINCIPLES

The following table provides a summary to why each of the 10 design principles are important and identifies some key success factors for achieving built environments that promote healthy and active living.

Design Principle	Why is this important?	Success factors include
<p><b>ACTIVE TRANSPORT</b></p> <p>meaning travel that involves physical activity, such as walking and cycling, and public transport that is accessed via walking or cycling.</p>	<p>Active transport provides tangible health benefits by increasing daily physical activity levels. The evidence is that this improves health and wellbeing – physical and mental – and creates a greater sense of community.</p> <p>It also reduces greenhouse emissions with fewer trips made by cars.</p> <p><b>Research finding:</b> Australians who walk, cycle or use public transport to get to work have a lower incidence of overweight and obesity than those who drive to work (Wen et al, 2006).</p>	<ul style="list-style-type: none"> <li>• Urban form with mixed land use, key destinations and densities that provide for active transport and where pedestrian movements and cycle paths are planned as a priority, with roads for cars fitted around them. In particular:             <ul style="list-style-type: none"> <li>• connected cycleways and pedestrian paths that lead to local destinations, and</li> <li>• routes provided along predictable paths of travel, such as to schools, recreation facilities and shops.</li> </ul> </li> <li>• Bicycle storage facilities at public transport stations to enable users to cycle and then connect with public transport. Additionally, end of trip facilities such as bicycle racks and shower/change room facilities in the workplace support commuter decision making.</li> <li>• New growth areas have a variety of destinations (such as schools and shops) within walking or cycling distance, and high residential densities (such as over 20 dwellings per hectare) to support these.</li> <li>• Public transport is integrated in the transport planning process to develop a sustainable transport framework that caters to all users.</li> </ul>

## Design Principle

## Why is this important?

## Success factors include

### AESTHETICS

meaning the attractiveness of a place or area and how this affects the overall experience and the use of a place.

Aesthetically pleasing neighbourhoods and places encourage people to walk, cycle, talk and view, all things that improve health and wellbeing, and social interaction.

Features such as street trees, landscaping, path networks, street furniture, lighting and seating can actively contribute to keeping people physically active.

**Research findings:** In Perth, adults who had access to large attractive public open space were 50 per cent more likely to undertake high levels of walking (Giles-Corti et al, 2005).

There is growing evidence that attractive public open space is restorative, reducing mental fatigue and stress (Maller et al, 2002).

In a study of European urban adults, residents of areas with the highest levels of greenery were more than three times as likely to be physically active and 40 per cent less likely to be overweight or obese than those living in less attractive areas (Ellaway, 2005).

- High quality urban design that create places that are stimulating, attractive and safe for many people to use for a variety of activities.
- Welcoming, distinctive streets with frontages that create a pleasing pedestrian place, human scale and have points of interest (a 'sense of surprise') and community spaces where people may meet and gather
- Shade, shelter and rest areas provided, especially along major walking routes and playgrounds.
- Public art along routes to encourage interest. Signage to tell the history of the place and its people.
- High standards of maintenance.



## Design Principle

## Why is this important?

## Success factors include

### CONNECTIVITY

meaning the directness of links and the number of connections in a path, street or road network. The ease with which people can walk and cycle around a neighborhood and between places.

Intersection types and density in an area influence the directness of travel between destinations, determining how people move around, whether by foot, bike, public transport or car.

The more connected an area, the easier it is to travel within it and there is increased likelihood of people preferring to travel by walking or cycling, regularly (cycling for transport and recreation).

**Research finding:** Various reviews have examined the relationship between neighbourhood walkability (including urban sprawl) and various measures of weight status (such as the Body Mass Index). These show that people living in urban sprawl are more likely to have a higher body weight (Robertson-Wilson et al., Papas et al. 2007, Black & Macinko 2008, Booth et al. 2005).

- A variety of local destinations within easy walking distance (400 metres is a comfortable walking distance for most people).
- A grid street layout for pedestrian and vehicular needs and off-road pedestrian and cycle networks in non-grid or curvilinear street layouts.
- New subdivisions based on pedestrian and cyclist movement in the first instance before “fitting” the road network into the plan.
- Retrofitting of existing subdivisions by closing road space (particularly one leg of cross intersections).
- Connected pathways and walking routes that lead to local destinations and connected with arterial networks to travel longer distances (particularly relevant for cycle use).
- Routes provided along predictable paths of travel, such as to schools, recreation facilities and shops.
- Local employment, recreation and retail facilities.
- Increase residential densities to support additional localised facilities (over 30 dwellings per hectare will sustain a basic level of facilities within walking distance).



## Design Principle

## Why is this important?

## Success factors include

### ENVIRONMENTS FOR ALL PEOPLE

meaning that places are safe and accessible for everyone, regardless of age, ability, culture or income.

A sense of belonging can positively benefit an individual's personal mental health and wellbeing, as well as physical health. This requires a range of facilities and services to meet the different needs of people including at different stages in the life cycle.

**Research findings:** Getting out and about, meeting people and making social contacts (and developing social capital) can help people have longer and physically and mentally healthier lives. Conversely, people with fewer social contacts, networks and emotional support are more likely to be obese (Department of Human Services, 2002) or to become an offender (Clarke, 2004).

The ability to walk to destinations such as shops and transit stops is associated with physical activity among children and adolescents, therefore it is important to provide safe and easy access to a variety of destinations in the neighbourhood ((Davison and Lawson, 2006).

- Members of the community including children and young people involved in planning and design processes.
- Buildings designed to enable access by all people including those with mobility problems.
- Parks with facilities for all age groups e.g. play equipment for toddlers, basketball rings for teens, seniors 'play' equipment, fitness trails, with separate facilities to accommodate the needs of different groups.
- Local facilities and meeting places connected with a network of walking and cycling paths with housing and other destinations.
- Paths are suitably wide, with suitable surfaces and gradients for users in wheelchairs or those who are otherwise mobility impaired.
- A mixture of housing densities, styles and types so people can "age in place" if desired.
- Cul de sacs/courts (with through pedestrian access) included in new housing developments, as cul de sac living has been shown to have a positive influence on the time children spend playing outdoors (Veitch et al, 2006).
- Well maintained community facilities, parks and open spaces, public places – these promote a sense of community ownership.



## Design Principle

## Why is this important?

## Success factors include

### MIXED DENSITY

meaning residential development that includes various housing types, such as single dwellings and multi-units and development of varying size and height.

Mixed density promotes a more diverse community and caters to the various stages of life, including a variety of housing allowing for 'ageing in place'.

**Research finding:** Research has shown that increased housing density or mixed density is one of the built environment features that contributes to increased active transport, along with mixed use planning and increased connectivity (Gebel et al, 2005).

- Mixed density development integrated with surrounding development, with connected street networks, mixed land uses, public transport and supporting infrastructure including walkways, public areas and cycle paths.
- Within a mixed density development, connected street networks, mixed use land uses and public transport that ensure:
  - walking, cycling and public transport is planned and supported
  - key destinations, such as shops, schools and medical centres, are within walking distance
  - good streetscape integration and enhanced public space surveillance
  - high quality public transport (i.e. direct and frequent) is accessible to residents
  - high quality building design which contributes to the function, attractiveness and conviviality of an area
  - adequate public areas are provided within walking distance (up to 800 metres), including open space and a variety of places for social interaction.
- Communities with a range of housing sizes, styles, densities, housing tenure and price options, and including flexible and adaptable housing (for all ages and stages of life).
- Supportive housing policies such as multiple socio-economic mixes, affordable housing and student accommodation.

### MIXED LAND USE

meaning complementary uses, such as housing, shops, schools, offices, libraries, open space and cafes, are co-located.

When there are choices, residents, workers and visitors are more likely to walk, cycle or take public transport, particularly when they can conveniently undertake multiple activities at the one destination. As well as the health benefits, this assists in reducing the use of car for local trips (i.e. within 3–5 km of home) - an established known producer of greenhouse gas emissions.

**Research finding:** In low density neighbourhoods with a few local destinations, fewer people walk and more people drive (Frank, 2004; Wen, 2006). From a health perspective, even a slight increase in physical activity and the prevention of weight gain can lead to significant community benefits

- A variety of destinations within easy walking distance (usually within 5–10 minutes or about 400 metres) of the home or work and rarely further away than 20 minutes.
- A range of development types and densities (including residential) that allow for a mix of day and night time activities including safety and surveillance considerations.
- Integration of the surrounding transport networks and adjoining developments with new development.
- Lighting, street furniture, signage, footpath treatment and safe road crossings provide a safe and convivial urban realm for all users.

## Design Principle

## Why is this important?

## Success factors include

### PARKS AND OPEN SPACE

meaning land for passive recreation, sport and recreation, preservation of natural environments, green space and/or urban stormwater management.

Access to vegetated areas such as parks, open spaces and playgrounds is associated with perceived better general health and wellbeing, reduced stress levels, reduced depression and more walking.

Suitable parks and open space can contribute to people meeting Australian physical activity recommendations of at least 60 minutes of moderate to vigorous activity for children and adolescents each day and 30 minutes of moderate intensity recreation activity on most days of the week for adults.

**Research finding:** One study found that people who use public open spaces are three times more likely to achieve recommended levels of physical activity than those who do not use the spaces. Users and potential users prefer nearby, attractive, and larger parks and open spaces (Wolf, 2008).

- The open space network is an integral part of the urban structure with a variety of safe and attractive spaces. It is well designed, aesthetically pleasing, accessible and well maintained.
- Parks and open space vary in size, form and the functions that they perform and may include neighbourhood (small areas of open space for local residents), district and regional open space, including linear parks along riverways or environmental corridors linking areas of open space and possibly incorporating off-road shared cyclist and pedestrian paths. Their use is for both passive and active recreation.
- Local parks, playing fields and regional parks are connected with walking and cycling routes.
- Local parks have trees, shade, seating, playgrounds, landscaping, birdlife and well-maintained footpaths (especially for older adults and families with infants and children).
- Community gardens particularly in higher density housing areas.

### SAFETY AND SURVEILLANCE

meaning actual safety and perceived safety. Perceptions of safety influence the nature and the extent that people use spaces and places.

Design that aims to reduce crime or perceptions of safety, as well as actual safety, can enhance the physical, mental and social wellbeing of a community.

**Research finding:** Well-designed and maintained places facilitate community members meeting and socialising in public places, enhance social capital and increase the likelihood of people feeling safe and secure (Whitzman 2008, p. 234; Foster 2008).

- Active building frontages so that windows overlook footpaths.
- Pedestrian routes with good sightlines to entrances and exits and landscaping pruned to ensure sightlines are clear and there are opportunities for surveillance.
- Artificial lighting to improve night time safety and surveillance, as well as natural surveillance, enabling walking and cycling, including after dark for women, youth and older people.
- Well-lit streets and spaces, and the safe design of streets and pedestrian/cycle paths.
- Environments that actively encourage the prevention of falls and injury, particularly for older adults and children. This includes with well maintained non-slip surfaces and gradients to enable safe and convenient use by all users. Neighbourhoods with a mix of land uses to increase the level of activity on the street.
- Shopping centres and public transport settings with good footpath and cycle route connections between them and to adjoining neighbourhoods for safe use during the day and after hours.
- Parks, play areas and public open spaces located so they are visible from adjoining buildings such as houses, streets and schools.
- On-street car parking to calm traffic speeds, support retail and commercial businesses, and provide a buffer between pedestrians and roads.

## Design Principle

## Why is this important?

## Success factors include

### SOCIAL INCLUSION

refers to a society where all people and communities have the opportunity to participate fully in political, cultural, civic and economic life.

International research has shown that social inclusion can lead to greater social cohesiveness and better standards of health. Designing facilities to encourage meeting and social interaction in communities can improve mental health. Cycling, walking and public transport can stimulate social interaction on the streets as well as have health benefits for residents (Wood et al., 2008). Neighborhoods that depend solely on cars for access can isolate people without cars – particularly the young and old. Social isolation and lack of community interaction are associated with poorer health.

**Research finding:** Communities that enable all citizens to play a full and useful role in the social, economic and cultural life of their community are likely to be healthier than those where people face insecurity, exclusion and deprivation (World Health Organisation, 2003).

- Well-maintained, active public spaces that enable community interaction, encourage active lifestyles, provide for multiple users and shared use of community facilities.
- Community art included in public buildings and space.
- Streets that support active transport.
- Consultation with community, service providers, government agencies, and the private sector about the type and level of facilities required in the community to support active living.
- Well-located and integrated activity and shopping precincts that respond to the diverse needs of new and existing residents.
- Access to activity and shopping precincts by a variety of transport modes, including pedestrians, cyclists and public transport.
- An interconnected network of pedestrian paths and on and off street cycle paths for easy and convenient access to key locations and destinations (especially schools and shops) within the community and adjacent neighbourhoods.
- There is active and passive surveillance over the public realm.
- Conflicts between user groups, such as older adults and skate board users and cyclists and pedestrians, is anticipated and avoided through good design.

### SUPPORTING INFRASTRUCTURE

meaning facilities that encourage regular and safe physical activity, such as walking, cycling, public transport, social interaction and recreation. It includes footpaths, bikeways and bike facilities, public transport, seating, lighting, toilets, shade, water fountains, signage and fencing.

Appropriate, well-designed and maintained infrastructure that supports active living is critical to support such physical activity, also other recreation, social interaction and active transport options. It is best when co-ordinated and integrated with other infrastructure and development and ideally should be part of an overall design of landscape and urban development.

**Research findings:** There is evidence that children are more likely to be active if they have public open space with exercise related facilities such as basketball courts and running tracks (Everson et al, 2007; Cohen et al, 2006). Unless children have access to these in their local neighborhood they rely on their parents for transportation (Hoefler et al, 2001).

- Supporting infrastructure considers the profile and needs of the users of the infrastructure.
- Shelter from the sun, rain and wind, also well located and designed seating.
- Footpaths designed as part of a network with safe road crossings and well maintained.
- Cycleways well marked and safe for cyclists and pedestrians if a shared facility.
- Public transport stops safe through visibility and lighting, sheltered (if appropriate) and well signposted.
- Lighting for night time safety, located to light up walkways, meeting places, road crossings, signage, public transport stops and other well used night time areas.
- Public toilets located in high use public areas with good signage.
- Signs that are clearly written and well placed to provide essential information to the public.

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