Government of South Australia
Preventive Health SA

Heart Foundation | Healthy Active by Design™

Healthy Active by Design for SA

A guide to planning, designing and developing healthy built environments in South Australia

Heart Foundation | Healthy Active by Design™

intermethod

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Authors: Natalya Boujenko (Intermethod) and Paul Vivian (Intermethod)
Project manager: Luci Ward (National Heart Foundation of Australia)

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Acknowledgment:
This document provides a contemporary update from the previous Heart Foundation's *Healthy by Design SA* (2012) which was the result of strong collaboration between industry professionals and the authors. We would like to thank and acknowledge the work of the authors and contributors to that award-winning document as well as the Office for Design and Architecture SA, the Office for Recreation and Sport, and the Department of Health and Ageing who funded development of that guide.

This document also draws on resources, evidence and guidance developed through the Heart Foundation's *Healthy Active by Design* digital toolkit and acknowledges the substantial contribution of the many authors, practitioners and researchers whose work underpins that foundational material, including where content has been adapted or directly referenced.

Executive summary

The planning and design of cities, towns and neighbourhoods directly influence people's ability to walk, cycle and use public transport, access healthy food, spend time outdoors and participate in community life. These everyday opportunities for movement, healthy eating and social connection are key drivers of cardiovascular health and overall health and wellbeing.

Developed with support from Preventive Health SA, *Healthy Active by Design for SA* provides guidance for planning, designing and delivering healthy built environments in South Australia. It responds to the urgent need to address key contributors to overweight and obesity — physical inactivity, sedentary behaviour and poor nutrition.

The Heart Foundation's Healthy Active by Design program supports South Australian strategic, urban development, transport, social infrastructure and public health planning by promoting built environments that make physical activity an easy and regular part of daily life.

Car-centric urbanisation across South Australia continues to contribute to our public health problems, through increasing levels of chronic disease risk factors such as overweight and obesity, insufficient physical activity, sedentary behaviour and poor nutrition. The design of our built environment — neighbourhoods, transport systems, public spaces and local food environments — can either support or hinder daily physical activity, access to healthy food and opportunities for social connection. Investing in walkable neighbourhoods and active transport infrastructure is one of the most cost effective strategies for improving population health.

The guide is organised around eight design features, outlined in Table A, with corresponding goals and key principles for each. Each of these eight features supports everyday health, encourages physical activity and contributes to better heart health:

- **Public open space** supports a diverse range of activities, from informal recreation such as walking, wheeling, bike riding, play and exercise to organised sport, training and community or cultural events.
- **Community facilities** have an important role in supporting health and wellbeing by enabling people to stay physically and mentally active, connect with others and enjoy a better quality of life.
- **Buildings** shape how we move, rest and live each day. Well designed buildings can encourage everyday movement, provide healthy indoor environments and support people's health across their lives.
- **Destinations** are places people go to meet daily needs and take part in community life. They include shops, services, businesses, education, recreation and civic facilities. Well-planned destinations give people everyday reasons to walk, connect and spend time locally, turning movement into a natural part of daily life.
- **Movement networks** that prioritise active and public transport lead communities toward healthier, more connected and sustainable futures.
- **A diverse mix of housing** supports people at different life stages and household circumstances, helping communities remain inclusive, adaptable and resilient over time.
- A strong **sense of place** turns neighbourhoods into places people care about. Neighbourhoods with a strong sense of place invite people to walk, linger and connect, supporting wellbeing, local identity and everyday social life.
- Easy access to affordable, environmentally sustainable, **healthy food** where people live, work and play is critical for improving community wellbeing and heart health.

Key recommendations

The recommendations presented in Table A summarise the key planning and design actions identified throughout this guide. They bring together the evidence presented across all sections to highlight practical ways the built environment can support healthier communities. While each topic area focuses on a different aspect of neighbourhood design — from movement networks and destinations to housing, buildings and food systems — the recommendations work together as a connected framework.

Collectively, they outline how coordinated planning, design and management can create neighbourhoods that make healthy choices easier, strengthen social connection and support liveable, resilient communities.

Table A. *Healthy Active by Design for SA* design features, goals and key principles.

Design feature and goal	Key principles	
Public open space  Provide a range of public open spaces that meet the recreational, physical and social needs of all members of the community, while also strengthening everyday connection to nature.	Location: easy to find and reach.	• Deliver a coherent and legible network of public open spaces. • Connect spaces seamlessly to walking, cycling, public transport and the wider street network. • Provide clear, intuitive access through strong wayfinding, universal access, clear sightlines and logical routes.
	Function: supports diverse, everyday use for all ages and abilities.	• Support a mix of passive and active uses. • Provide spaces and facilities for sport that respond to local and regional demand. • Enable community, cultural and social activities. • Include facilities that extend use across the day and evening. • Accommodate everyday activities.
	Design: attractive, safe, inclusive and climate-responsive places people want to use.	• Provide comfort essentials: shade, seating, water, toilets and lighting. • Design for all ages, abilities and cultural diversity. • Use sustainable, heat-safe materials and climate-responsive siting. • Integrate trees and green infrastructure for cooling and biodiversity. • Ensure safety through visibility, multiple entries and active edges. • Create flexible spaces that support play, gathering and everyday activity.
Community facilities  Deliver welcoming facilities and spaces that meet diverse activity and service needs and are well integrated in the spatial and transport networks of existing or growing communities.	Location: coordinated and integrated.	• Deliver an integrated network approach to the delivery of community facilities. • Identify and protect locations and ways to deliver for future community needs. • Co-locate with high-quality public spaces and active transport networks to strengthen place identity and support physical activity.
	Access: easy, safe and inclusive for everyone.	• Provide easy, affordable and convenient access for everyone. • Design and deliver safe walking, cycling and public transport connections to facilities. • Minimise physical and social barriers to encourage regular use.
	Adaptability: multi-purpose and flexible.	• Design flexible layouts that support multiple uses and easy reconfiguration. • Future-proof buildings and infrastructure to enable upgrades without major rebuilds. • Strengthen indoor–outdoor connections to expand usable space and support varied activities.

Design feature and goal	Key principles	
Buildings  Design, deliver and continually adapt buildings that enhance and activate the public realm, foster physical activity and social connection throughout daily use, and provide healthy indoor environments.	Spatial design: encourages movement and social connection.	• Design prominent, attractive stairways that encourage everyday movement. • Provide end-of-trip facilities and integrate buildings with nearby public transport. • Create spaces that support social interaction as well as areas for privacy and retreat. • Ensure good natural surveillance. • Design flexible and adaptable spaces.
	Indoor environment: healthy, comfortable and well ventilated.	• Provide well-ventilated indoor environments with effective air filtration. • Incorporate natural ventilation where possible. • Maintain comfortable indoor temperatures through passive and active design strategies. • Select low-emission materials and finishes. • Reduce indoor pollutants and moisture to protect air quality and health.
	Natural light and nature: daylight, views and access to greenery.	• Optimise daylight within indoor spaces. • Provide visual connections to nature. • Incorporate biophilic design elements. • Provide access to outdoor spaces.
Destinations  Plan neighbourhood destinations as local hubs by clustering essential services, healthy food outlets, employment, education and recreation within walkable and cyclable catchments, supporting healthy behaviours and stronger community life.	Diversity: a mix of everyday destinations within walkable neighbourhoods.	• Provide a mix of everyday destinations within local neighbourhoods. • Locate destinations at distances that match how often people use them. • Plan for diverse needs across ages, households and lifestyles.
	Access: direct, safe and connected.	• Provide direct, safe and continuous walking, wheeling and bike riding connections between destinations. • Ensure destinations are well served by public transport and shared mobility.
	Quality and comfort: people-orientated design.	• Prioritise people-first street and centre design. • Provide comfort and amenity, including shade, seating, lighting and greenery. • Maintain high design quality and upkeep to support walking and place vitality.
Movement networks  Facilitate safe and convenient travel within neighbourhoods through accessible, integrated and connected walking, wheeling, bike riding and public transport routes.	Connectivity: direct links between key destinations.	• Create direct and logical routes that link key destinations. • Ensure consistent design across priority networks. • Respond to local context and needs. • Plan urban transport as an integrated system. • Co-locate land uses and transport.
	Safety: personal security and minimised road crash risk.	• Design safe infrastructure. • Implement the safe system approach. • Address personal security needs and crime prevention.
	Equity and accessibility: for all ages, abilities, and income levels.	• Design for all ages and abilities. • Add spaces for play. • Encourage physical activity.
	Comfort and attractiveness: high-quality networks and supporting infrastructure.	• Deliver high-quality, attractive movement networks. • Provide clear and frequent wayfinding. • Provide supporting infrastructure including seating, lighting, water fountains, public toilets, bike parking and end-of-trip facilities. • Integrate green infrastructure and water-sensitive urban design. • Use and promote sustainable materials and maintenance practices.

Design feature and goal	Key principles	
Housing diversity  Provide housing choice through a mix of various types, tenures and sizes to meet the dwelling needs of a diverse community contributing to active and vibrant places.	Choice: a variety of dwelling types.	• Provide a variety of dwelling types, dwelling and allotment sizes. • Enable inclusive, mixed-income neighbourhoods.
	Density: supports local living outcomes.	• Increase density near services and transport. • Achieve density to support local services and efficient infrastructure delivery.
	Design: well-designed, adaptable, safe and functional.	• Design and retrofit diverse health-promoting housing while respecting neighbourhood character. • Support adaptability, comfort and long-term liveability. • Support housing with safe active streets, public spaces and everyday destinations.
Sense of place  Celebrate local character and identity through design, shaping places that feel distinctive, welcoming and grounded in their community, while supporting everyday life, walking, connection and wellbeing.	Character: local heritage, culture and neighbourhood identity.	• Celebrate local history, stories and cultural identity. • Protect valued streetscapes, landscapes and landmarks. • Reflect local materials, art and craftsmanship. • Reinforce unique neighbourhood character and diversity. • Honour Indigenous and shared cultural heritage.
	Comfort to pause and stay.	• Create welcoming, safe and attractive places. • Make it comfortable to pause, sit, meet and linger. • Provide shade, seating, lighting and everyday amenities. • Support casual activity, play and social connection. • Foster places people value, care for and return to.
	Community: involvement and stewardship	• Involve communities early and continuously in decisions about their local places. • Enable inclusive participation across ages and cultures. • Empower community-led initiatives and partnerships. • Support local leadership.
Healthy food  Create accessible, affordable and sustainable food environments that support healthy eating patterns and connect communities through integrated planning and design.	Retail and access: convenient, affordable and locally accessible.	• Locate fresh food outlets within walking distance of homes and connect to safe walking, wheeling and bike riding routes. • Prioritise supermarkets, greengrocers and fresh food markets. • Enable diverse local food businesses in mixed-use areas. • Adopt healthy food standards in venues.
	Production and distribution: resilient and well-connected.	• Integrate community gardens into residential neighbourhoods and enable private space for food growing. • Incorporate edible landscapes in streets, parks and public spaces. • Strengthen links between urban consumers and local and peri-urban producers. • Protect freight routes connecting agricultural regions to the city. • Support local food hubs and distribution centres.
	Community awareness: education, connection and food literacy.	• Support alternative local food networks. • Create opportunities for food education and knowledge sharing.
	Sustainability: waste reduction and circular food systems.	• Protect peri-urban agricultural land. • Reduce food waste. • Mitigate heat island effect.

How to use this guide

This *Healthy Active by Design for SA* guide aligns with the Heart Foundation's Healthy Active by Design digital toolkit, which provides practical guidance, checklists and case studies to support the planning and design of health-promoting neighbourhoods, organised around eight design features. This guide builds on this foundation by offering South Australian context and updated evidence.

The various roles stakeholders may have are described in Table B, along with specific examples of how the different roles can support the implementation of *Healthy Active by Design for SA* principles into policies, projects and activities.

Table B. How stakeholders can use *Healthy Active by Design for SA*.

Role	Role description	Application of *Healthy Active by Design for SA*
SA government		
Leader	Set state-wide policy directions and targets.	Embed objectives into state strategic policy documents.
Owner/ custodian	Lead by example through best practice when fulfilling obligations to manage community assets such as buildings, facilities, public spaces and reserves.	Embed principles within procurement processes/ strategies as standard criteria.
Regulator	Prepare and administer relevant legislation.	Embed objectives and principles into SPP library modules, regional plans and the *Planning and Design Code*.
Funder	Administer funding programs. Contribute funds or resources, as one of a number of parties that contribute funds or resources, towards an initiative or service.	Include principles as criteria for applications to funding programs such as open space grant program or SA enabling infrastructure program. Ensure objectives are established for projects and included in evaluation or performance measurement criteria.
Partner/ initiator	Leading or collaborating with agency/community/private partnerships to plan, design and deliver an initiative or project.	Ensure objectives are included in partnership agreements (e.g. as project outcome statements or project evaluation criteria) and project plans (e.g. master plans/precinct plans).
Innovator	Develop and trial new approaches or designs in the public realm.	Demonstrate the practical application of principles, particularly in flagship projects.
Service provider	Fully fund and provide a service.	Use to identify opportunities for retrofitting the built environment during ongoing maintenance programs/ work.
Local government		
Leader	Set clear policy direction and provide leadership to ensure safe and active neighbourhoods.	Embed objectives and principles in council strategies, plans and key documents.
Champion	Lead by example through best practice planning, advocacy and partnerships that support healthy, active communities.	Prioritise principles within capital works programs and external advocacy.

Role	Role description	Application of *Healthy Active by Design for SA*
Regulator	Administer and enforce relevant planning and local government legislation.	Ensure principles are reflected in development assessment and approvals to act in the public health interest.
Funder	Allocate and manage resources to deliver infrastructure and programs that support active living.	Invest in walking, cycling and public realm improvements aligned with principles as well as *SA's Active Travel Design Guide*.
Service provider	Plan, deliver and maintain local infrastructure, services and programs.	Deliver high-quality streets, open spaces and facilities that enable active living and healthy eating.
Private sector		
Funder/ investor	Contribute financial resources to development and infrastructure projects.	Support developments that integrate principles and deliver public benefit.
Developer	Plan, design and deliver private developments.	Incorporate principles into site layout, building orientation and layout, street design and connections.
Consultant	Provide specialist planning, design and engineering advice.	Apply principles in master planning, urban design and transport advice.
Infrastructure provider	Design, deliver and maintain infrastructure assets.	Ensure infrastructure supports walking, cycling and access to destinations.
Employer	Influence workplace practices and travel behaviours.	Support active travel and healthy workplace initiatives aligned with *Healthy Active by Design for SA*.

Cover photo: Felixstow Reserve, Felixstow. Page 3 photo: Osmond Terrace, Norwood.
Both photos: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Contents

Definitions/glossary

Active travel: travel in which the sustained physical exertion of the traveller directly contributes to their motion. This includes walking, wheeling, bike riding, skateboarding and scootering. Active travel also includes the use of e-mobility devices such as e-bikes even though their use typically requires less physical effort.

Active travel infrastructure: infrastructure for people walking, wheeling and bike riding. This can include footpaths, cycle paths, kerb ramps, raised pedestrian crossings and other measures that support active forms of transport.

Active school travel: active school travel refers to the use of active travel specifically to travel to or from school. It is often referred to as 'walking to school', 'active commuting to school' or 'active travel to school'.

Child-friendly neighbourhood design: design which considers and prioritises opportunities for children to play, socialise, learn, explore, grow and develop.

Cycling: travel using a bike, including traditional, recumbent and an e-bike, as well as any form of trike (a three-wheeled bike). Although e-bike requires less physical effort to operate it is typically considered as a form of physically active travel. The term 'cycling' can be used interchangeably with bike riding.

Density: density measures the number of units within an area of land. Two key measures of density used by planners are population density and dwelling/residential density. Neighbourhoods are often described as being low-, medium- or high-density.

Greenfield areas: undeveloped land, usually on the urban fringe, that has not previously been used for residential, commercial or industrial purposes. These areas are often used for new housing developments and are typically located in outer suburbs or rural settings.

Infill housing: redevelopment of vacant or underutilised land that is located between existing structures and is centrally located. Redevelopment is often for residential, commercial or retail use.

Land use mix: diversity or variety of land uses (e.g. residential, commercial, industrial).

Microscale pedestrian streetscapes: the fine-grained, street-level features of urban design and pedestrian infrastructures that influence pedestrian experience. These include footpath quality, steepness, type of surface used, presence of physical disorder (e.g. graffiti) and availability of lighting, benches or shades along the streets.

Mixed-use development: the integration of multiple land uses including for example residential, commercial, retail and recreational spaces within a single area.

Passive surveillance: greater visibility and observation across both public and private spaces. This can be achieved through the presence of people, window placement in architectural design, active street fronts and clear lines of sight, which enhance safety and discourage antisocial behaviour.

Physical activity: any bodily movement produced by skeletal muscles that require energy expenditure including activities such as walking, wheeling, bike riding and recreational exercise. Physical activity can be categorised into different domains: transport, leisure, occupational and household.

Transport-oriented development: a compact mixed-use residential and commercial development positioned with good access to public transport (such as a centrally located train station or bus stop).

Public transport: shared transport services for the general public including buses, trains, trams and ferries.

Walkability: the extent to which an area supports and encourages walking (as well as wheeling and bike riding). It typically consists of three urban design factors: residential density, street connectivity and land use mix which combine to create an environment that makes active travel to destinations easier and more convenient.

Wheeling: the action of moving as a pedestrian, using manual or self-assisted modes of transport including the use of wheelchairs, mobility aids, scooters and others.

Abbreviations

AFNs	Alternative food networks
ARCHI	Adaptive Reuse City Housing Initiative
BMI	Body mass index
BSUD	Biodiversity sensitive urban design
CPTED	Crime prevention through environmental design
HiAP	Health in all policies
HVAC	Heating, ventilation and air conditioning
LGA	Local Government Association
LiDAR	Light detection and ranging
NSW	New South Wales
SA	South Australia / South Australian
SDG	United Nations' sustainable development goals
SPP	State planning policies
VOC	Volatile organic compound
WSUD	Water sensitive urban design

A message from the Heart Foundation

David Lloyd
Chief Executive Officer
National Heart Foundation of Australia

The Heart Foundation is committed to making heart health achievable for everyone in Australia by 2050. In South Australia, preventable chronic diseases continue to place a significant burden on individuals, communities and our health system. Many of the major risk factors we see today, including physical inactivity, unhealthy eating, social isolation and rising overweight and obesity, are strongly shaped by the environments in which people live, work and move.

We know that lasting behaviour change is far more likely when neighbourhoods make healthy choices easy. Walkable, well-connected streets, safe and appealing public spaces, access to nutritious food, and places that foster social connection all play a critical role in supporting daily physical activity, healthy eating and community wellbeing. Improving urban design and walkability is one of the most effective ways to address the modifiable risk factors for heart disease and other chronic conditions.

That is why influencing planning policy, urban design and infrastructure decisions is central to our active living efforts. By translating health research into practical guidance for planners, designers and decision makers, we are helping to embed health considerations into the planning and implementation frameworks that shape South Australia's built environments. Embedding public health expertise, and adopting a genuine Health in All Policies approach, is essential to creating healthier, more equitable communities.

This collaborative, cross-sector approach is gaining momentum. Partnerships across government, industry, researchers and communities are strengthening practice, informing policy reform and supporting neighbourhoods that enable people to be active, eat well and stay connected. These partnerships are critical to reducing inequities and ensuring people in South Australia — particularly those in outer suburbs and disadvantaged areas — benefit from environments that support better health.

I am pleased to endorse the *Healthy Active by Design for SA* and the role this guide will play in shaping healthier, more liveable communities across the state. The practical, locally relevant guidance that it provides will help practitioners design and deliver neighbourhoods that support active living and healthier choices for all people in South Australia.

I thank Preventive Health SA for their support of the Heart Foundation to carry out this important work and for their continued leadership in creating the conditions for better health in South Australia.

A message from Preventive Health SA

Marina Bowshall
Chief Executive
Preventive Health SA

Preventive Health SA is proud to support the Heart Foundation to deliver this updated edition of *Healthy Active by Design for South Australia*. This resource reinforces the critical role well-designed places play in supporting healthy living, now and for generations to come.

As the state's lead prevention agency, Preventive Health SA works collaboratively across government, local councils, non-government organisations, and communities to deliver evidence-informed, innovative, and integrated action aimed at reducing the burden of non-communicable disease, including cardiovascular disease. Mental wellbeing and obesity prevention remain central priorities, and we recognise the powerful influence that built environments, particularly food and physical activity environments, have on our population's health.

Unfortunately, good health is not equally experienced by all South Australians. Some areas experience higher rates of overweight and obesity, poorer mental wellbeing and lower availability of healthy food, green open space and walkable neighbourhoods. Creating environments that support health is therefore both a public health priority and an equity imperative.

Our health is directly impacted both positively and negatively by the environments and systems in which we live. Neighbourhood planning and design shapes how people move, connect and engage in everyday life. Walkable, connected, and inclusive environments make active living easier and more achievable, facilitating health behaviours and supporting community connection and cohesion.

This updated resource provides best-practice guidance to support the development of liveable neighbourhoods that enable good physical and mental health. Together, we can shape places that support healthier people, healthier communities, and a healthier future.

Introduction

About this document

Designing our neighbourhoods to promote walking, wheeling, bike riding, active recreation, healthy eating and public life supports healthy, active local living.

The planning and design of cities, towns and neighbourhoods directly influence people's ability to walk, cycle and use public transport, access healthy food, spend time outdoors, and participate in community life. These everyday opportunities for movement, healthy eating and social connection are key drivers of cardiovascular health, and overall health and wellbeing.

Developed with support from Preventive Health SA, *Healthy Active by Design for SA* provides guidance for planning, designing and delivering healthy built environments in South Australia. It responds to the urgent need to address key contributors to overweight and obesity — physical inactivity, sedentary behaviour and poor nutrition. By focusing on the environments and systems that shape health, it aims to support policymakers, planners, designers and related professionals to create healthier, more active communities. First published by the National Heart Foundation of Australia (Heart Foundation) in 2012 titled *Healthy by Design SA*, this revision reflects updated evidence and contemporary planning practice by demonstrating how planning and design decisions can positively influence community health and wellbeing.

The Heart Foundation continues to assess the evidence base for how the built environment can support physical activity and better cardiovascular health. As part of this ongoing work, the Heart Foundation has developed the Healthy Active by Design digital toolkit, which brings together current evidence, practical guidance, checklists and case studies to support the planning and design of neighbourhoods that encourage walking, cycling and active living.[1]

The Healthy Active by Design digital toolkit is organised around eight design features with corresponding goals outlined in Table 1. *Healthy Active by Design for SA* follows this same structure. Table 1 also shows how these eight design features align with the 17 United Nations' Sustainable Development Goals (SDGs), adopted to improve health and wellbeing, reduce inequality, protect the environment and support long-term prosperity.[2]

This guide applies to both established and growth areas. While much of the advice is relevant to metropolitan, regional and rural contexts, the primary focus is on metropolitan areas where built form and population density present particular opportunities and challenges for healthy place design.

Henley Square, Henley Beach. Public art and interactive play encourage exercise and enjoyment of the beach setting for children and families. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Table 1. Eight design features of the *Healthy Active by Design* and alignment with the United Nations' SDGs.

Design feature	Design goal	Primary UN SDGs	Secondary UN SDGs
Public open space	Provide a range of public open spaces that meet the recreational, physical and social needs of all members of the community, while also strengthening everyday connection to nature.	SDG 3 SDG 11 SDG 15	SDG 10 SDG 13
Community facilities	Deliver welcoming facilities and spaces that meet diverse activity and service needs and are well integrated in the spatial and transport networks of existing or growing communities.	SDG 3 SDG 11	SDG 4 SDG 10
Buildings	Design, deliver and continually adapt buildings that enhance and activate the public realm, foster physical activity and social connection throughout daily use, and provide healthy indoor environments.	SDG 3 SDG 11	SDG 12 SDG 13
Destinations	Plan neighbourhood destinations as local hubs by clustering essential services, healthy food outlets, employment, education and recreation within walkable and cyclable catchments, supporting healthy behaviours and stronger community life.	SDG 3 SDG 11	SDG 8 SDG 12
Movement networks	Facilitate safe and convenient travel within neighbourhoods through accessible, integrated and connected walking, wheeling, bike riding and public transport routes.	SDG 3 SDG 11 SDG 13	SDG 9 SDG 10
Housing diversity	Provide housing choice through a mix of various types, tenures and sizes to meet the dwelling needs of a diverse community contributing to active and vibrant places.	SDG 10 SDG 11	SDG 1 SDG 3
Sense of place	Celebrate local character and identity through design, shaping places that feel distinctive, welcoming and grounded in their community, while supporting everyday life, walking, connection and wellbeing.	SDG 3 SDG 11	SDG 10 SDG 16
Healthy food	Create accessible, affordable and sustainable food environments that support healthy eating patterns and connect communities through integrated planning and design.	SDG 2 SDG 3	SDG 11 SDG 12

Next page photo: Bowden Village Square, Bowden. Interactive water play creates an engaging and enjoyable way for children to use and experience outdoor spaces. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

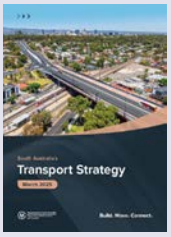
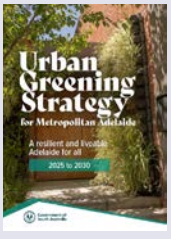
The case for healthy, active design

Strategic context

The Heart Foundation's *Healthy Active by Design for SA guide* supports South Australian strategic, urban development, transport, social infrastructure and public health planning by promoting built environments that make physical activity an easy and regular part of daily life.

The Heart Foundation's *Healthy Active by Design for SA* supports strategic urban development, transport, social infrastructure and public health planning in SA by promoting walkable, connected communities with well designed and diverse housing, access to social infrastructure, public open space, shops including affordable healthy food choices, services and recreation. By embedding these planning and design considerations across housing, movement and public spaces, *Healthy Active by Design for SA* complements state and regional plans and initiatives ensuring that our cities, townships and neighbourhoods develop and contribute to the health, wellbeing, sustainability and ongoing liveability of all people living in South Australia.

Table 2. South Australia's strategic context and the relevance of *Healthy Active by Design for SA.*

Strategic document	Relevance of *Healthy Active by Design for SA* guide
South Australian Economic Statement 2023[3] 	A strong, future-ready economy is built on the foundation of a healthy, active and resilient population. The guide outlines the evidence base and provides principles for health-enhancing design features that help deliver economic, wellbeing and liveability benefits to make SA a desirable place to live and work.
South Australia's 20-Year State Infrastructure Strategy 2025[4] 	The guide offers a practical lens for infrastructure planning and prioritisation that supports healthier and more liveable communities as sought by this strategy. It advocates long-term investment in integrated infrastructure promoting active transport, housing diversity, connected neighbourhoods and better access to services and community facilities.
South Australia's Transport Strategy 2025[5] 	The guide supports a SA transport vision for better accessibility, safety, sustainability and liveability. The guide encourages increased public transport use and active travel. It contains design features and associated principles for movement, destinations and housing diversity.
State Public Health Plan draft 2025[6] 	The guide emphasises the importance of including health in planning and design decisions and highlights how active living and wellbeing play a key role in preventive health. It provides guidance on creating healthier neighbourhoods, including access to healthy food, public open space, streets that encourage active transport and well-considered building design.
Urban Greening Strategy for Metropolitan Adelaide 2025[7] 	The guide aligns with the strategy's goal of increasing tree canopy and biodiversity across built environments. It highlights the positive role of parks and open spaces in promoting physical activity.

Strategic document	Relevance of *Healthy Active by Design for SA* guide
Health in All Policies (HiAP)[8]	The guide advocates a more defined role for health considerations in the SA planning system to support wellbeing outcomes beyond the traditional considerations. It highlights how decisions about where we live, work and play influence our health and wellbeing.
SA Government Region Plans e.g. *Greater Adelaide Region Plan*[9] 	These plans are blueprints that identify spatial outcomes for each region, including Greater Adelaide. They show where new homes, infrastructure, employment and public spaces will be located and identify future growth areas. The guide adds a health-focused lens, helping ensure that communities have access to parks and open space, safe options for walking, wheeling and riding, public transport as a mode choice, healthy food access, a mix of housing types and local services. The guide should inform the delivery of directions contained in each plan.
SA Housing Roadmap 2024[10] 	The guide articulates the significant role that land use planning and the built environment should play in enabling housing diversity as sought in the Roadmap. It promotes healthy urban design and the delivery of a range of new housing typologies and built environments across existing and future living areas.
Renewal SA Strategic Plan 2023–2026[11] 	The guide aligns with Renewal SA's focus on increasing affordable housing supply and creating liveable precincts by promoting active streets, safe walking and cycling infrastructure, good access to local destinations and neighbourhood design that encourages everyday physical activity.
Local government strategic (community) plans	Provides guidance and publication references for local government in community development, strategic planning, policy formulation and infrastructure delivery to support improved community health and wellbeing. The guide can inform preparation of council documents such as annual budgets, business plans, and strategies for asset management, social infrastructure, public health, infill and growth area planning and open space and recreation infrastructure.
Local government regional health plans	The guide informs regional health planning by showing how the built environment can support physical activity, social connection and healthier eating patterns, reducing the risk of chronic disease. By considering matters such as healthy urban design, transport networks and community facilities, local governments can better meet their responsibilities for community health under the *South Australian Public Health Act 2011*.
Preventive Health SA Strategic Framework	The guide highlights the importance of supporting people in South Australian to be healthier across all generations by addressing social and environmental determinants of health and equity, including obesity prevention and mental wellbeing. It provides guidance on creating health-supportive built environments that help prevent chronic disease, aligned with the direction of the framework.
Healthy Parks Healthy People South Australia 2021–2026[12] 	The guide acknowledges that using parks and natural spaces improves physical, mental, and social wellbeing across communities. It includes design features and principles to create active, connected and accessible environments, helping people more easily incorporate time outdoors and in nature as part of their lifestyle.

Public health and the role of local government

South Australia has a solid legislative framework supporting the design of healthy environments. The *South Australian Public Health Act 2011* helps create healthier communities and address current and emerging public health challenges. The *Preventive Health SA Act 2024* strengthens this framework by requiring a dedicated state-level prevention agency, Preventive Health SA.

The *Preventive Health SA Act 2024* focuses on the determinants of health — the social, environmental, economic and cultural factors that influence wellbeing — and provides support for local government through partnerships, capacity building and evidence-based resources.[13]

The *Public Health Act 2011* provides the legislative basis for a strategic and integrated approach to public health and recognises the connection between the built environment and health outcomes.[14] This act designates councils as local public health authorities with a broad mandate to preserve, protect, and promote the health and wellbeing of their communities. Councils are required to develop regional public health plans that assess local health needs and identify strategies to address them, including a strong focus on creating healthy built and natural environments.

Regional public health plans provide a framework for local governments to align infrastructure and asset management with public health outcomes. Through Preventive Health SA, councils can access support for addressing the determinants of health through their service delivery functions. This integrated legislative framework ensures coordinated action between state and local government to create healthier communities.

Councils further play a crucial role in delivering healthy built environments. They design, create and maintain public infrastructure and community facilities and are responsible for:

- parks, gardens, playgrounds, libraries and sports facilities
- roads, footpaths and bike paths
- stormwater infrastructure
- planning decisions and building standards.

Councils also deliver community health services and set local policies that directly impact public health including immunisation programs, food safety licensing and inspections, community transport, animal control, and waste management.

However, local governments do not work alone to improve public health outcomes. Successful programs require collaboration. This occurs both within councils — involving engineering, planning, environmental, economic, health and community services teams — and with other levels of government, local services and agencies through joint funding, partnerships and legislative mechanisms.

Land use planning

Healthy Active by Design for SA principles should influence how land use, transport and infrastructure decisions are made within the South Australian planning system. Broadly, these principles emphasise planning and urban design that promotes physical activity, social connection, access to public space, healthy food environments and long-term community wellbeing. In SA, this approach aligns with long-standing public health objectives and provides a framework for ensuring that growth and development contribute positively to the liveability of neighbourhoods and the wellbeing of residents across the state.

The *Planning, Development and Infrastructure Act 2016* establishes the statutory foundation for embedding design quality and community wellbeing considerations within planning decisions.[15] It recognises planning and design that support active and healthy lifestyles as a core element of sustainable development and provides the mechanism through which design principles are integrated into the planning system. The *State Planning Policies* (SPP), particularly SPP 2: Design quality, seek development and land use planning to support walkability, accessibility, public open space, safe public environments, integrated land use and transport outcomes.[16] Together, the Act and SPPs encourage planning authorities to consider how the built environment influences the health of communities.

Regional plans further translate these objectives into spatial outcomes for each region. *Greater Adelaide Regional Plan*,[9] as the Adelaide region's long-term strategic framework, identifies the preferred pattern of settlement, infrastructure networks, public-realm improvements and growth areas over the next 15–30 years. By doing so, it provides the spatial structure through which healthy design principles should be realised ensuring that future communities have access to open space, active transport choices, housing diversity and local services that support healthy, connected lifestyles.

Greater Adelaide Regional Plan places strong emphasis on the living locally concept in creating walkable, well-serviced neighbourhoods that integrate housing, employment, transport and green infrastructure. This approach supports active travel, improves access to parks and recreational areas, enhances urban greening and promotes social interaction through high-quality public spaces and local centres.

Vardon Avenue, Adelaide. Mid-rise development and active street frontages create a walkable city street where people move easily on foot and by bike. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

These healthy design considerations help ensure that new and existing suburbs and townships maintain or enhance their liveability while supporting climate resilience, health equity, affordability and efficient infrastructure delivery.

The recommendations and implementation ideas contained throughout this document should be applied in planning practice through preparation of masterplans, design guidelines, assessment processes, subdivision layout considerations and public-realm investment. They also support the policy objectives set out in South Australia's strategic planning documents, outlined in the 'Strategic context' section of this guide.

Concepts such as street connectivity, safe and accessible walking, wheeling and bike riding routes, passive surveillance, diverse housing typologies and proximity to everyday services influence the assessment and design of new developments. These principles inform how planners, developers and local government structure neighbourhoods to support physical activity, reduce car dependency and foster environments that contribute to physical and mental wellbeing. This is very important in the investigations and preparation of structure plans, *Planning and Design Code* amendments and the evolution of infrastructure schemes (including for social infrastructure delivery).

Despite their strong policy footing and evidence base, healthy design outcomes ultimately depend on how effectively these principles are integrated into development proposals, infrastructure planning and local decision-making.

Healthy Active by Design for SA can be used to support amendments to planning instruments so health considerations are embedded in planning decisions, helping create more consistent approaches across local governments and aligning planning practice with councils' responsibilities under public health legislation.[17]

As the state continues to address housing demand, climate adaptation and changing community needs, embedding healthy by design thinking within all levels of planning remains critical. Ensuring that regional strategies, local precinct plans, the *Planning and Design Code* and public-realm investment consistently reflect these health-supportive principles will be essential for achieving resilient, equitable and liveable communities across South Australia.

Walkability

Walkability is the extent to which an area supports and encourages walking (as well as wheeling and bike riding). It typically consists of three urban design factors: residential density, street connectivity and land use mix which combine to create an environment that makes active travel to destinations easier and more convenient. Walkability is a central concept to this guide and shapes the approach to all eight design features.

Scope of walkability and benefits

Walkability is a long-standing term that describes the ease and desirability of walking in built environments. In practice, the concept is now applied more broadly to include people who move using wheelchairs, mobility scooters, wheeled recreational devices such as rollerblades or roller skates and other personal mobility devices. Some of these devices may use both footpaths and road space. In this guide, the concept of walkability also sits alongside bike riding and other forms of micromobility that support short local trips. However, because people riding bikes travel at higher speeds than people walking, separated facilities for bike rlding are often preferred in many street environments to reduce conflict and improve safety. These definition concepts are explored in further detail in *SA's Active Travel Design Guide*.[18]

Learning to walk is one of life's first acts of independence. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

While the term walkability is still widely used, broader terms such as active travel, active mobility and active living environments are increasingly used to better describe environments that support everyday movement powered by people rather than private motor vehicles.[19]

Walking should be an easy, affordable option for most people to incorporate physical activity into daily life. The online Healthy Active by Design digital toolkit highlights that:[20]

- People living in walkable neighbourhoods are 1.5 times more likely to achieve recommended levels of physical activity.
- Walkable neighbourhoods are associated with significantly better cardiovascular health, with residents 2.8 times more likely to have a healthy cardiovascular profile.
- Walking for 30 minutes most days can substantially reduce the risk of heart disease for most people of Australia.

There are many benefits to improving walkability and encouraging people to walk. These are discussed throughout this guide, together with recommendations for improving the built environment to support walking. Without going into detail here, the main areas of benefit for individuals, businesses, organisations and society include positive impacts on:[21, 22]

- health and wellbeing
- safety
- placemaking
- social cohesion and equity
- local economy and businesses
- attractiveness of the neighbourhoods
- urban regeneration
- cost savings
- environment
- sustainability

- liveability
- transport efficiency
- civic engagement.

Because these benefits are so wide-ranging, walkability considerations apply across all eight design features of this guide. For this reason, walkability is introduced here at the outset.

Assessing walkability

A range of approaches are used to measure walkability. Examining these approaches is important because they highlight the types of factors that can be adjusted to improve walkability outcomes and are therefore relevant to consider here.

These measures consider both the built form and the quality of the walking environment as factors that influence whether people choose and are encouraged to walk.

Considerations for the built form include:[23, 24, 25]

- residential density
- street connectivity
- land use mix and destination types.

Collectively, these built form factors indicate how often destinations are located within residential areas and how direct the routes are for reaching them.

The quality of the walking environment involves a wider range of more detailed considerations, including: [26, 27]

- quality of footpaths (e.g. width, surface and interruptions from side streets)
- frequency and types of crossings
- safety from traffic
- personal security, i.e. perception of crime
- greenery and shade
- comfort and supporting infrastructure (e.g. lighting, seating, water fountains, noise from and proximity to traffic, crowding, wi-fi and public toilets)
- design quality and sense of place.

There are also frameworks that assess walkability from the perspective of people's experience when moving through an environment. One example is the healthy streets framework, which evaluates urban spaces through ten key indicators:[28]

  - everyone feels welcome
  - easy to cross
  - shade and shelter
  - places to stop and rest
  - not too noisy
  - people choose to walk and cycle
  - people feel safe.

Another example of a framework that assesses walkability from the perspective of people's experience when moving through an environment is the 12 quality criteria used by Gehl Architects used in public space public life studies:[29, 30]

- Protection:
  - protection against traffic and accidents
  - protection against crime violence
  - protection against unpleasant sensory experiences.
- Comfort:
  - opportunities to walk
  - opportunities to stand/stay
  - opportunities to sit
  - opportunities to see
  - opportunities to talk and listen
  - opportunities for play and exercise.
- Delight:
  - scale
  - opportunities to enjoy the positive aspects of climate
  - positive sensory experiences.

These examples illustrate that many walkability frameworks share common ingredients. While they may vary in emphasis and apply slightly different lenses of consideration, they broadly point to the same set of environmental qualities that influence whether walking is safe, convenient, comfortable and appealing.

The Heart Foundation has developed the community walkability checklist for public use to help identify features of the local area that affect the ease of walking. The checklist can be used to assess walking routes to everyday destinations.[31]

The need for environments to support active living and healthy eating

Many of the factors that influence health lie in the complex social, economic and physical environments in which people live.

The factors that influence health are known collectively as determinants of health.[32] Car-centric urbanisation across South Australia continues to contribute to our public health problems, through increasing levels of chronic disease risk factors such as overweight and obesity, insufficient physical activity, sedentary behaviour and poor nutrition.[33]

Table 3 summarises key indicators of health and wellbeing in South Australia. It highlights the current status of major health outcomes.

Table 3. Health status in SA.

Heart disease	More than 1 in 20 adults are living with cardiovascular disease.[34]
Mental health conditions	1 in 4 adults reported having a mental health condition during 2024.[32]
Overweight and obesity	Obesity has surpassed smoking as the leading risk factor for preventable health conditions in SA,[35] including heart disease, type 2 diabetes and some cancers.[36, 37]
	Overweight and obesity affects 63% of adults,[38] and 37% of children and young people.[39]
	Childhood obesity has risen by 25% in the last 3 years.[35, 39]
	Among children aged 2–17 in South Australia, obesity rates were 28% higher for those living in the most socio-economically disadvantaged areas compared with the state average.[35]
Preventable risk factors	Insufficient physical activity levels — reported by 4 in 10 adults[38] and 3 in 4 children (5–17 years).[39]
	Sedentary behaviours — 45.7% of children exceeded the daily guidelines of less than 2 hours screen time on weekdays, rising to 73.8% on weekends.[40]
	Inadequate vegetable consumption — reported by 93% of adults and 90% of children and young people.[38, 39, 40]

Relationship between health and the built environment

The design of our built environment — neighbourhoods, transport systems, public spaces and local food environments — can either support or hinder daily physical activity, access to healthy food and opportunities for social connection. These factors are major contributors to cardiovascular health, obesity, type 2 diabetes, several types of cancer and overall wellbeing.[41] Where a person lives is one of the greatest predictors of their life expectancy,[42] and how our cities, towns and neighbourhoods are planned and designed is a powerful driver of health equity.

Three interconnected elements of the built environment are especially influential:[43]

- **Getting people active:** safe, appealing, shaded and connected streets, paths and green and blue spaces that make active recreation, walking, wheeling and cycling part of everyday life.
- **Supporting healthy eating:** equitable access to fresh, nutritious, affordable food and limiting exposure to unhealthy options.
- **Strengthening communities:** neighbourhoods that foster social interaction, inclusion and a sense of belonging.

These elements directly respond to leading, modifiable risk factors for chronic disease — including physical inactivity, unhealthy eating patterns, and social isolation and loneliness.

Physical inactivity can double the risk of cardiovascular disease, type 2 diabetes and obesity.[41] A physically active lifestyle can protect against obesity, hypertension and several chronic diseases including cardiovascular diseases, type 2 diabetes and several forms of cancer.[38, 44, 45] Physical activity also helps lower the risk of developing cognitive and mental health conditions, such as dementia, and can lessen symptoms of stress, anxiety,[46] and depression.[47, 48]

Current eating patterns in South Australia are a leading risk factor for overweight and obesity, heart disease, and other chronic diseases including type 2 diabetes and some cancers. The frequent consumption of non-home cooked meals and discretionary ultra-processed food and/or drinks has been associated with overweight and obesity in adults living in Australia.[49]

Persistent loneliness affects one in four people in Australia and is now recognised as a major global health challenge.[50] Young adults and older people are particularly affected, with one in three people aged 18–25 or over 60 experiencing loneliness.[51] Its impacts extend far beyond social and emotional wellbeing — persistent loneliness can double the risk of new onset depression and is linked to heightened risks of cardiovascular disease, type 2 diabetes, Alzheimer's disease and overall poorer health.[50] Aspects of the built environment can exacerbate social isolation and loneliness. These include weak community infrastructure, lack of access to public transport, insufficient green space, low residential density and car-dependence combined with increasing rates of people living alone.[50, 52]

Almost 90% of South Australia's population live in urban areas and housing pressures alongside population growth are driving rapid growth and intensification of cities and towns across the state.[9] In this period of accelerated development, the way we plan, design and regulate the built environment has become increasingly important to population health outcomes.

Characteristics that impact population health outcomes in SA include:[53]

- limited availability and accessibility of:
  - public transport
  - connected active transport infrastructure
  - fruit and vegetable retailers
  - quality public open space and associated facilities
- housing location, diversity, design and affordability
- noise and air pollution, particularly from exposure to traffic on busy roads
- exposure to outlets selling unhealthy food
- real and perceived safety and security concerns
- low urban greening combined with predominant hard surfaces which results in increasing heat and UV exposure
- loss of agricultural land to urban expansion.

The cost of poor health

Chronic diseases place significant and growing pressure on South Australia's health system, driving demand for services and increasing expenditure. Beyond healthcare costs, poor health also affects economic productivity, workforce participation and community wellbeing. South Australia cannot afford to continue responding to illness only after it occurs — a preventive, systems based approach is essential.

$1.25 billion

estimated healthcare costs to the South Australian economy every year due to cardiovascular disease.[54]

$2.4 billion

cost of physical inactivity to the Australian health system in 2018–19, largely due to cardiovascular diseases.[55]

$11.8 billion

obesity-related healthcare and loss of productivity costs to the Australian community in 2018. This cost is estimated to rise to $87.7 billion by 2032 if no action is taken.[36]

Healthy Active by Design for SA provides an evidence-informed foundation for creating well-designed, accessible and connected environments that make it easier for people to eat well, be active, and stay socially connected every day. Supporting health across all life stages reduces pressure on the health system, strengthens communities and enhances quality of life.

Investing in walkable neighbourhoods and active transport infrastructure is one of the most cost effective strategies for improving population health. Economic modelling shows that:

- if the entire South Australian adult population met the physical activity guidelines, the state's health system could save $804 million annually[56]
- every kilometre walked instead of driven in NSW saves their state $5.24 in health costs alone.[57]

It's not just about health

While the Heart Foundation promotes good urban design for its proven health benefits, the planning and design principles in this guide deliver far broader value for communities.

Climate and transport resilience

Climate change and rising transport costs are major, interconnected challenges for South Australia. Neighbourhoods designed for walking, cycling and public transport reduce emissions, improve air quality and lower reliance on fossil fuels, while also supporting heart health and overall wellbeing. Considering the relationship between climate change, the built environment and transport choices is essential to creating resilient, liveable places that support people to be active in their everyday lives.

Fuel cost pressures particularly affect people without access to nearby services or affordable transport. Designing compact, well connected neighbourhoods can reduce car dependence and ensure equitable access to everyday destinations.

Reducing car dependence through delivering walkable neighbourhoods and greater investment in public transport, footpaths and cycling infrastructure creates significant opportunities to reclaim space in the public realm for trees, green infrastructure, water-sensitive design and places for people. Large areas of streets and activity centres across SA are currently dedicated to car movement and parking, much of it hard-surfaced and heat absorbing. These impervious surfaces contribute directly to urban heat islands, worsening heat stress and reducing thermal comfort during increasingly frequent and intense heatwaves.

Reduced traffic congestion

Congestion brings significant economic, environmental and social costs – longer sedentary travel times, higher fuel use, reduced productivity, increased stress, poorer air quality and greater health impacts. In 2019 across greater Adelaide, drivers spent around 60% of travel time in congestion, with associated costs projected to rise from $1.4 billion in 2016 to $2.6 billion by 2031.[58]

Strengthening integrated public transport and active travel infrastructure across greater Adelaide is essential to shift travel behaviour, reduce future congestion costs and improve transport equity.[59]

Vibrant main streets and town centres support businesses

Enhancing the quality and walkability of our urban environments offers measurable economic returns. Attractive, comfortable activity centres draw more people who visit more often, stay longer and spend more, boosting both community wellbeing and local economies.

The Heart Foundation's *Good for business* highlights strong evidence that investment in walking, wheeling, bike riding and public transport improves the economic performance of activity centres and main streets. Two key factors shape this performance: how car parking is provided and managed, and the need to reduce traffic speeds — are both crucial for safer, more vibrant and economically successful streets and centres.[22]

Healthy active ageing

South Australia's population is ageing rapidly: in 2021, people aged 65+ represented 19.4% of the population, this age cohort is projected to grow by over 200,000 people by 2051, reaching 24.1% of the state's population.[60] Supporting independence and enabling older people to age in their communities of choice is a strategic priority.[61]

North Terrace, Adelaide Railway Station. A major multimodal gateway where rail, tram, walking and cycling connect people to nearby universities, cultural institutions, hotels and entertainment venues. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

The built environment plays a critical role in supporting healthy, active and connected ageing. To support wellbeing and quality of life for older South Australians, housing must be affordable, adaptable, accessible, climate resilient and well located. This housing needs to be supplied within safe, walkable and vibrant neighbourhoods with convenient access to public transport and essential services, helping older people remain connected, independent and physically active.

The Healthy Active by Design Healthy active ageing module supports ageing well, by showing how neighbourhood design can support movement, dignity, participation and wellbeing across later life.[62]

Urban greening for climate resilience and nature connection

Living in areas with more than 30% tree canopy within 1.6 km of home has been linked to a reduced risk of developing diabetes, hypertension, and cardiovascular disease.[63]

Regular exposure to and engagement with nature has been widely shown to boost physical activity and strengthen social connections, helping to reduce stress, depression and anxiety, enhance overall life satisfaction, and lower the risk of chronic conditions such as cardiovascular disease and type 2 diabetes.[63, 64] Conserving, restoring and increasing urban greenery reduces cardiometabolic disease risks, hospitalisations and health sector costs.[65, 66] Without careful management, the intensification and growth of SA cities and towns can result in tree canopy and biodiversity loss,[67] diminishing liveability and reducing shade that is independently protective and restorative of physical health.[68] The Greater Adelaide Regional Plan sets a tree canopy target of 30% as a policy lever to address this risk.[9]

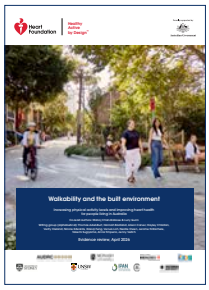
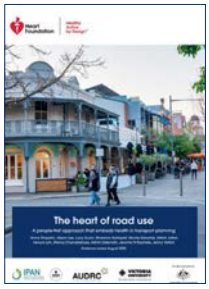
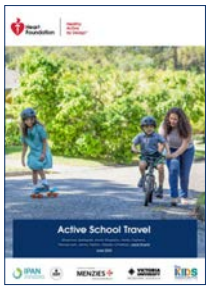
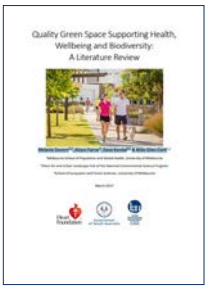
Biodiversity sensitive urban design (BSUD) is an approach to urban planning and design that aims to embed biodiversity considerations within planning and design frameworks for the benefit of people and nature in urban environments.[69] Protecting and enhancing biodiversity assets and integrating biodiversity into the urban fringe provides for greater conservation and public heath opportunities well into the future. Green Adelaide's *Blueprint for a nature-positive Adelaide* discusses this approach and opportunities to implement it.[70]

Other Heart Foundation resources on the built environment

The Heart Foundation has developed and compiled a wide range of built environment publications, policy statements, evidence reviews and practical tools through its Healthy Active by Design digital toolkit. These resources provide detailed guidance on topics such as walkable neighbourhoods, active transport, access to healthy food, public open space and community design, and are intended to support planners, designers and decision-makers in creating healthier places. Readers are encouraged to refer to the publications and policy resources available on the Healthy Active by Design publications webpage for more detailed information and supporting evidence on the built environment topics covered in this guide. Recent built environment publications are listed in Table 4.

Readers are also encouraged to review the Healthy Active by Design modules on healthy active ageing and walkability in less advantaged areas.

Table 4. Recent built environment publications.

	*Walkability and the built environment: increasing physical activity levels and improving heart health for people living in Australia*[71]		*Good for business, the health and economic benefits of making town centres and main streets more walkable*[22]
	*The heart of road use, a people-first approach that embeds health in transport planning*[72]		*What Australia wants, neighbourhood design*[75]
	*Designing for density, delivering healthy, higher-density neighbourhoods in Australia*[73]		*Blueprint for an Active Australia*[76]
	*Active school travel*[74]		*Quality green space supporting health, wellbeing and biodiversity: a literature review*[77]

Next page photo: Felixstow Reserve, Felixstow. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Design features

Public open space

Public open space supports a diverse range of activities, from informal recreation such as walking, wheeling, bike riding, play and exercise to organised sport, training and community or cultural events.

Public open space encompasses the diverse, freely accessible areas within an built environment used for recreation and enjoyment. While academic and policy definitions vary, it generally includes both vegetated and non-vegetated land. Figure 1 illustrates the distinction between public spaces and green spaces. Within this broad definition, classification plays an important role. Public open spaces are typically categorised by their primary function, level of use and scale within the wider network, ranging from local parks and sports reserves to civic plazas, public realm spaces and natural areas.[77, 78]

Public open space serves an important function in supporting health and wellbeing with a noted improvement in mental health of residents who live within neighbourhoods with higher provision of green space.[79, 80, 81, 82]

The goal for public open space:

Provide a range of public open spaces that meet the recreational, physical and social needs of all members of the community, while also strengthening everyday connection to nature.

Bonython Park Playground / Nature-integrated play equipment set within landscaped areas encourages active play, exploration and social interaction for children and families. Photo: supplied by WAX Design, photography by Sweet Lime Photo.

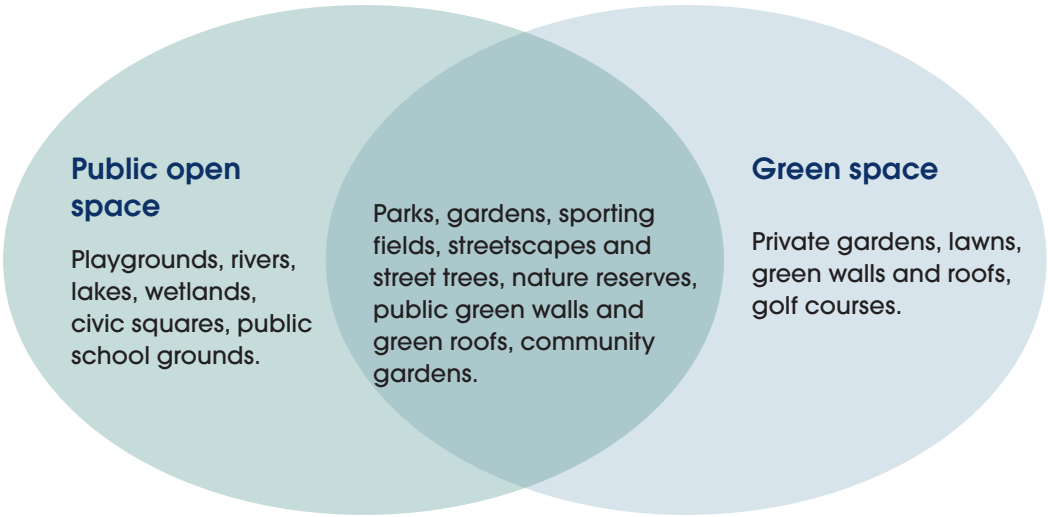


Figure 1. Elements of public open space and green space.

Access to parks and green space is strongly linked with higher levels of physical activity such as walking, wheeling and bike riding, recreation or sport participation. This can lead to lower obesity and related health outcomes.[77, 82, 83, 84, 85, 86, 87, 88] Public open space is a key determinant of liveability, reflecting how the built and natural environments work together to support good health outcomes and create liveable communities.[84, 89, 90]

Public open space plays an important role in connecting people with the natural environment. Green and vegetated areas are typically cooler than hard, sealed surfaces such as roads and footpaths, helping to lower ambient temperatures within neighbourhoods.[77, 91, 92, 93] This cooling effect can reduce local urban heat island impacts, improve human thermal comfort, and lower the risk of heat-related illness, particularly during extreme heat events.[94]

The Healthy Active by Design digital toolkit highlight that well-designed public open space:[95]

- supports physical activity across all ages
- improves mental health
- reduces the risk of chronic disease
- provides play opportunities that support child development
- provides cooling effects and improved air quality.

Benefits are greatest in large, attractive and well-equipped spaces with features that encourage physical activity, particularly when located in safe, walkable neighbourhoods.

The location, size, design and management of public open space shape how it is used, valued, and experienced by the community. Accessibility, visibility and amenity influence whether people choose to visit, while factors such as distance from homes and services, perceived safety, social exclusion, maintenance standards and competing expectations of use can limit who feels welcome and able to participate.[78] As population growth and urban densification reduce private open space, strategically located, equitably distributed, and well-managed public spaces become essential to sustaining liveability, supporting health and strengthening social connection in increasingly compact cities.

Figure 2 shows the key features of public open spaces and benefits.

Key principles

Considerations for planning and designing public open space

Location: easy to find and reach.

Function: supports diverse, everyday use for all ages and abilities.

Design: attractive, safe, inclusive and climate-responsive places people want to use.

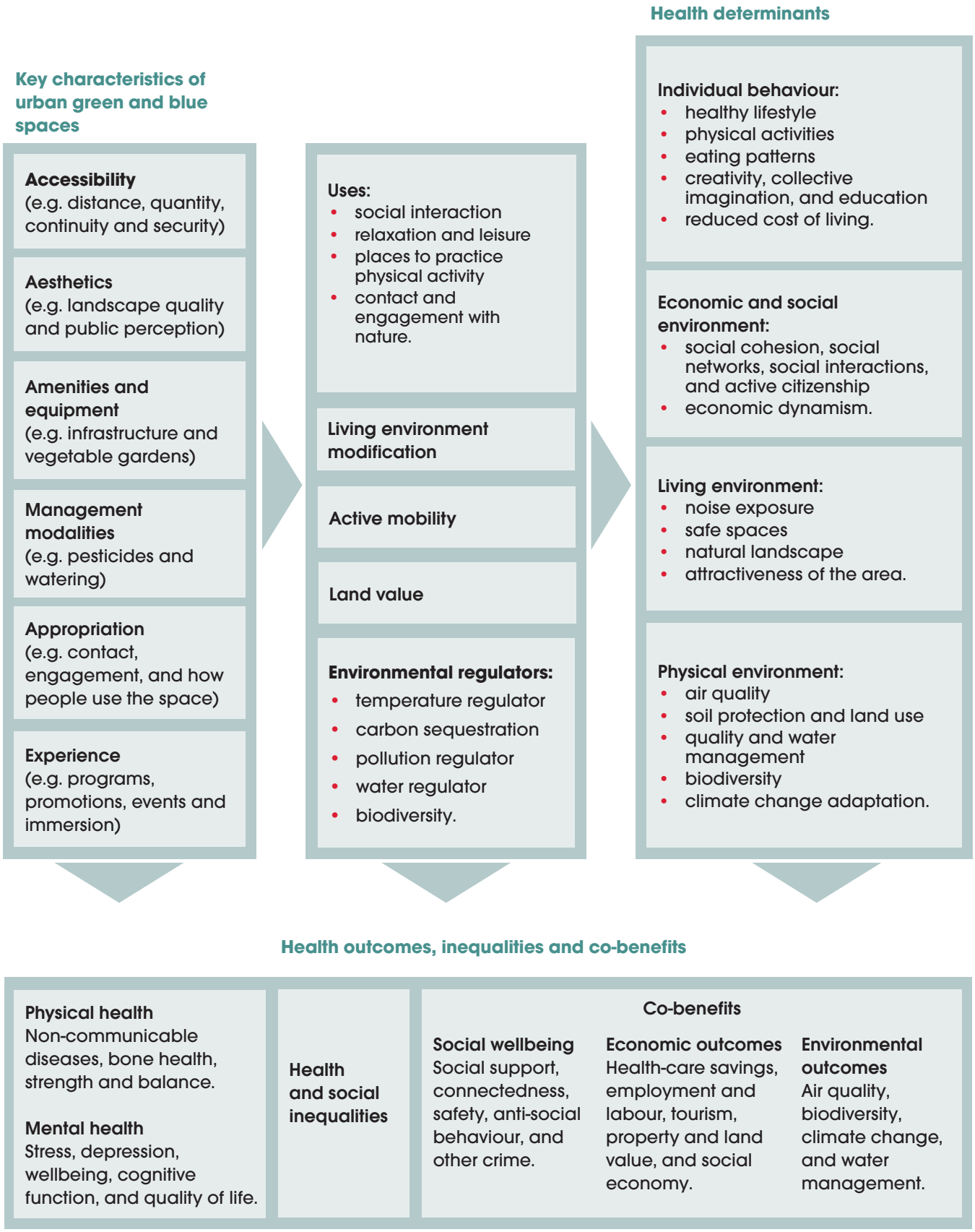


Figure 2. Conceptual pathways between public open space, health, equity and co-benefits.
Source: Adapted from Hunter et al 2023.[96]

Location: easy to find and reach.

- Deliver a coherent and legible network of public open spaces.
- Connect spaces seamlessly to walking, cycling, public transport and the wider street network.
- Provide clear, intuitive access through strong wayfinding, universal access, clear sightlines and logical routes.

Public open space provision is typically characterised by a hierarchy of parks and trails that ensures most residents have convenient access to a range of spaces close to home, with local parks generally located within a safe 400 metre walking distance, and larger neighbourhood, active or linear open spaces available within approximately 800 metres to 1 kilometre.[77, 78, 79] These direct, safe connections to the street network result in higher usage rates, as does clear, legible walking routes; mid-block links and active travel cut-throughs that reduce detours; safe crossings; and green, comfortable paths that make access feel easy, intuitive and inviting for people of all ages and abilities.[79, 86]

A broad range of users should be involved in considering the different ways people move, gather and use space. Design strategies should include passive surveillance, ensuring clear sightlines to make routes safer and more inviting. Planning should provide a connected hierarchy of parks, combining nearby local spaces, well designed larger parks, and smaller parks with quality features and walking links to support regular walking, wellbeing and safe, active use.[97] Inclusive engagement and co-design help ensure public spaces respond to everyday needs, reduce barriers to participation and create environments that are safer, more welcoming and functional for everyone.[98, 99]

Function: supports diverse, everyday use for all ages and abilities.

- Support a mix of passive and active uses.
- Provide spaces and facilities for sport that respond to local and regional demand.
- Enable community, cultural and social activities.
- Include facilities that extend use across the day and evening.
- Accommodate everyday activities.

Public open space should be designed to respond to local needs, offering a range of facilities that support diverse user needs. For example, play equipment, grassed areas for organised sports and informal ball games, skate parks, linemarked

Kensington Gardens Reserve / Stepping stones within a naturalised water feature encourage active play, exploration and connection with nature. Photo: supplied by ASPECT Studios, photography by Sweet Lime Photo.

courts (including multi-use games areas) and playground markings (such as hopscotch or other games) support a variety of physical activities. Public open spaces should be adaptable and flexible, responding to changing needs and supporting diverse groups within the same space.[99, 100, 101]

Large open spaces should accommodate community gatherings such as markets, festivals and concerts. This multifunctional approach optimises valuable community resources, fosters social interaction, supports a strong sense of local identity and community spirit, and helps ensure that open spaces remain active and relevant to a broad range of users (not just organised sport). Policy guidance emphasises that open space assets incorporating both active recreation facilities and spaces for

Case study: Felixstow Reserve

The redevelopment of Felixstow Reserve, completed in 2017, transformed an underutilised site into a 7.6-hectare multipurpose park. The project was delivered through collaboration and joint funding between local government, the South Australian Government and the Australian Government, supporting improved stormwater management, neighbourhood revitalisation and stronger connections to the River Torrens Linear Park. The upgrade provides an important green space for the eastern suburbs while reducing barriers to everyday physical activity. An integrated wetland system, fitness stations, sheltered barbeque and seating areas, open lawns, diverse shared paths, a multi-use court and nature play spaces create an inviting environment that encourages residents to incorporate movement into daily routines. Seamless connections to the River Torrens Linear Park further extend safe, high-quality walking, wheeling and bike riding routes, strengthening access to open space that supports long-term cardiovascular health and wellbeing for people of all ages.

Beyond its physical improvements, the reserve upgrade has supported broader neighbourhood renewal and social connection. Engagement with Kaurna representatives informed cultural storytelling and interpretation within the landscape, strengthening local identity and sense of place. Located alongside areas undergoing public housing regeneration, the project provided early access to high-quality green space for residents during a period of neighbourhood change. By delivering inclusive, well-connected open space, the project helped reduce inequities in access to recreation, supported healthier daily routines and strengthened community pride and belonging.

Felixstow Reserve. Recreation and sport facilities, complemented by shade and landscaping, support active recreation and everyday physical activity for people of all ages. Photo: supplied by the Heart Foundation, photography: Sweet Lime Photo.

social and community functions bolster usage and wellbeing outcomes.[102]

Community gardens offer opportunities to grow and access fresh, healthy food, encourage regular physical activity, and foster connections with both place and community.[103] Further discussion of urban food benefits is outlined in the 'Healthy food' section of this guide.

Design: attractive, safe, inclusive and climate-responsive places people want to use.

- Provide comfort essentials: shade, seating, water, toilets and lighting.
- Design for all ages, abilities and cultural diversity.
- Use sustainable, heat-safe materials and climate-responsive siting.
- Integrate trees and green infrastructure for cooling and biodiversity.
- Ensure safety through visibility, multiple entries and active edges.
- Create flexible spaces that support play, gathering and everyday activity.

Well-designed public open spaces are welcoming, safe and purposeful, supporting active use and social connection for people of all ages and backgrounds. Thoughtful upgrades such as accessible paths, seating, play and recreation facilities, landscaping, safety features and clear signage can transform underused parks into vibrant places that encourage movement, play and everyday physical activity.[86, 101]

Designing for cultural diversity is also important, ensuring spaces accommodate a range of community practices, gathering styles and shared food traditions so they feel inclusive and locally relevant.[98]

Many built environment decisions have historically prioritised the needs and behaviours of only some users. As a result, public spaces can unintentionally exclude or disadvantage children, older people, women, people with disability and culturally diverse communities. Safety concerns, for example, may limit children's independent mobility and active travel to school.[99, 100, 104] Deliberate, inclusive design is therefore essential to remove barriers and support equitable participation. Aesthetic quality also matters: visually attractive, well-maintained spaces are more likely to encourage walking, wheeling, cycling and everyday recreation.[20]

Design must respond to environmental comfort and long-term resilience. Shade through tree canopy, climate-sensitive siting of play areas and careful material selection influence whether spaces remain usable in hot conditions. Materials should be durable and sustainable, and elements such as seating, play equipment and surfaces should be chosen and positioned to minimise heat absorption. Integrating water, green infrastructure and practical amenities such as drinking fountains, toilets, lighting and wayfinding enhances usability and safety, while clear sightlines and multiple entry points strengthen accessibility and perceived security.

Case study: The Northern Park Lands

The Northern Park Lands will be a staged, master-planned network of open spaces designed to connect the Gawler and South Para Rivers to the lower reaches of the Mount Lofty Ranges (Hills Face Zone). Positioned primarily between Gawler and the emerging Kudla Growth Area, the parklands will cover more than 1,000 hectares when completed.

The parklands are intended to provide regional recreation opportunities, support biodiversity and incorporate active travel connections, with the broader aim of improving community health outcomes. The network will include a mix of linear reserves and sporting precincts, alongside areas for passive recreation and natural landscapes. A sport and community hub is also proposed as a focal point for activity and gathering. The Northern Park Lands will help create environments that make physical activity a natural part of everyday life. By combining connected green corridors, accessible recreation spaces and destinations for sport and social interaction, the parklands are designed to support regular movement, contact with nature and community wellbeing.

The parklands will be governed by a new statutory body, the Northern Park Lands Trust, which will have ongoing authority to fund, develop, manage and maintain the parklands. The *Northern Parklands Act 2025* was gazetted in January 2026.

Across South Australia, public open space design should move beyond acknowledgment toward active cultural expression in partnership with Traditional Owners. This may include dual naming and storytelling, interpretive signage explaining cultural significance, incorporation of traditional land management practices such as cultural burning where appropriate, use of Indigenous plant species, and integration of First Nations art and design. Embedding living cultural knowledge strengthens place identity, supports reconciliation, and ensures public spaces reflect the depth and diversity of South Australia's First Nations heritage. Refer to the 'Sense of place' section of this guide for further information.

In the South Australian context, the design of public open space must align with the state's statutory planning framework. The General Development Policies – Open Space and Recreation within the *Planning and Design Code* seek to ensure that "pleasant, functional and accessible open space and recreation facilities are provided at state, regional, district, neighbourhood and local levels for active and passive recreation, biodiversity, community health, urban cooling, tree canopy cover, visual amenity, gathering spaces, wildlife and waterway corridors, and a range of other functions and at a range of sizes that reflect the purpose of that open space."[105] This section of the code is supported by high-level policies that guide delivery, including the provision of natural or landscaped areas, incorporation of Indigenous species and biodiversity, strong links and connections for pedestrians, cyclists and habitat corridors, spaces for play and recreation, and appropriate lighting, access, signage and built elements. These policies provide an important statutory reference point for the planning and design of public open space across South Australia.

In summary, effective design should:

- Provide diverse recreation options, including play areas, informal courts, skate facilities, multipurpose lawns and nature play to support organised and spontaneous activity.
- Ensure accessible paths, multiple entry points and clear sightlines to promote safety and inclusion.
- Integrate tree canopy, shade structures and green infrastructure to support cooling, connection to nature, biodiversity and ecological function.
- Select sustainable, climate-responsive materials that remain safe and comfortable in heat, particularly for seating, surfaces and play equipment.
- Include essential amenities such as seating, toilets, drinking fountains, lighting and wayfinding.
- Embed First Nations knowledge and culture.

Virginia Grove. Outdoor fitness equipment encourages physical activity and supports longer, more active use of the park.
Photo: supplied by WAX Design, photography by Sweet Lime Photo.

- Incorporate culturally inclusive facilities, such as flexible barbecue and gathering areas that accommodate diverse cooking traditions and community use.
- Design to address the needs of children, older people, women and people with disability, reducing safety barriers and supporting independent mobility.
- Conceal or green artificial structures to enhance visual amenity.[92]
- Support natural surveillance and visibility to reinforce safety and appeal.
- Build flexibility into spaces to accommodate changing uses and programming over time.

Retrofit ideas

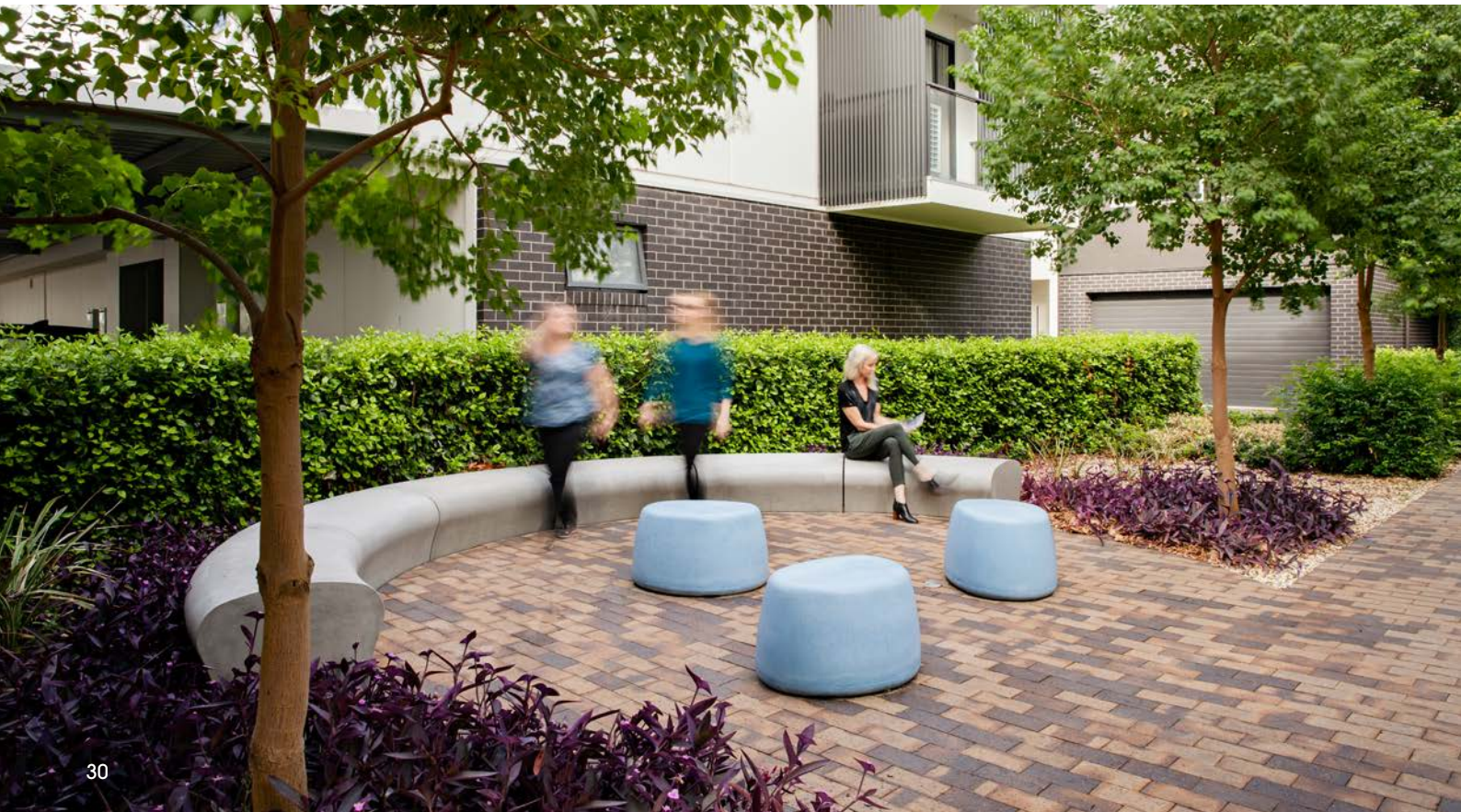
- Assess and upgrade paths, seating and play equipment to improve safety, comfort and accessibility.
- Repair or refresh surfaces, fences and amenities to improve aesthetics and enhance both actual and perceived safety.
- Enhance connections to streets, cycling paths, sidewalks and public transport.
- Add clear wayfinding, maps and sightlines to help people navigate easily.
- Increase vegetation by adding trees, shrubs and vertical greenery around entrances, along paths, and within open areas, retaining mature trees where possible, and planting a mix of species to create shade, habitat and visual appeal while connecting green areas into continuous canopy corridors.[93]
- Increase shade through pergolas or shade structures to improve thermal comfort and reduce UV exposure.
- Repurpose underused areas to support multiple activities, like casual play, exercise and social gatherings.
- Introduce community gardens, fitness stations, or informal activity equipment to boost engagement.
- Activate edges with cafés, markets or flexible event spaces to encourage greater use by more people.
- Add lighting in key paths and areas for safety during early mornings and evenings.
- Support schools to activate their open spaces after hours and on weekends for broader community use.

Plant 4, Bowden. Integrated playground and open space encourage play and social activities.
Photo: supplied by ASPECT Studios, photography by Sweet Lime Photo.

Monitoring and evaluation

- Establish a coordinated, state-wide program to map and monitor public open spaces, including their location, quality, biodiversity and patterns of use, incorporating community input and standardised data collection methods to ensure accessibility, consistency, and usability across agencies and for research, planning and public engagement.[95]
- Map and classify parks across the council area to evaluate their provision and accessibility within walking distances.
- Track park usage to see how many people visit, what activities they do and at what times.
- Gather feedback from users on what works well and what could be improved. Undertake preference-based research with community users to identify which public open space attributes are most valued and how these features influence active travel and recreation.[85]
- Evaluate accessibility for everyone, including children, older adults and people with disabilities.
- Assess the impact of events and programming on visitation and activity levels.
- Review how well parks link to streets, cycling paths, and public transport. The Heart Foundation's community walkability checklist can be used to assess routes within 800 metres of parks.[31]
- Identify areas that are underused or need redesign to better support community use.
- Feed monitoring results back into planning to guide future upgrades and investment.

Park Terrace, Gilberton. Landscaped pocket park with seating encourages rest, social interaction and neighbourhood gathering. Photo: supplied by WAX Design, photography by Sweet Lime Photo.



Community facilities

Community facilities have an important role in supporting health and wellbeing by enabling people to stay physically and mentally active, connect with others and enjoy a better quality of life.

Community facilities are infrastructure that includes buildings and associated spaces used for community purposes. This includes community centres, libraries, arts and culture venues, sport and recreation facilities (including swimming pools), parks, youth facilities, primary health, schools and early learning facilities.[106]

Community facilities are places where people gather, participate in programs and form meaningful social connections that help reduce social isolation and foster a sense of belonging, one of the key factors in promoting positive health.[107] When supported by coordinated planning, good design and management, community facilities help

The goal for community facilities:

Deliver welcoming facilities and spaces that meet diverse activity and service needs and are well integrated in the spatial and transport networks of existing or growing communities.

Payinthi Prospect Library. Shared library facilities support early learning, family connection and community wellbeing. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Mofflin Reserve Playground, Elizabeth Vale. Sport facilities integrated within Mofflin Reserve provide spaces for physical activity, supporting active lifestyles and social connection. Photo: supplied by LANDSKĀP, photography by Jack Fenby.

connect new and established communities, and reduce physical and social barriers, creating the conditions for stronger social networks to develop. This is important for heart health, as growing evidence shows that social isolation and loneliness are associated with a higher risk of cardiovascular disease, including coronary heart disease.[108, 109]

Community facilities play a practical role in developing social capital — the value created through relationships, networks and shared activities that enable communities to support one another and thrive — by providing accessible places where everyday interactions can occur across age groups, cultures and life stages. When facilities are welcoming, well located and actively used, they support different forms of social connection — from casual interactions that build inclusion, to stronger bonds within families and groups, and links between communities and institutions. In this way, community facilities help turn neighbourhoods into social environments where connection, participation and shared responsibility can grow over time.[107]

When planing policy (for example, structure planning, precinct planning or master planning) set clear expectations for the siting, co-location and flexible use of community facilities, communities gain more equitable access to the services that help shape health and quality of life. Linking facilities with public open space, education facilities and healthy food opportunities supports everyday activity, social connection and participation. Inclusive planning and coordinated programming strengthen local ownership, reduce health inequities and build healthier, more resilient neighbourhoods.[107, 110, 111]

The Healthy Active by Design digital toolkit highlights that:[112]

- Playgrounds, sports equipment and recreational facilities are positively associated with children's physical activity and social development.
- Access to school recreational spaces outside school hours increases children's activity levels.
- Schools are often centrally located and include a range of facilities, creating opportunities to increase social interaction and physical activity for local residents when made available outside school hours.
- Children and adolescents with access to shared school facilities outside school hours are more likely to be physically active.
- Using school grounds for activities such as farmers' markets supports social connection and improves access to healthy food.

Key principles

Considerations for planning and designing community facilities

Location: coordinated and integrated.
Access: easy, safe and inclusive for everyone.
Adaptability: multi-purpose and flexible.

Location: coordinated and integrated.

- Deliver an integrated network approach to the delivery of community facilities.
- Identify and protect locations and ways to deliver for future community needs.
- Co-locate with high-quality public spaces and active transport networks to strengthen place identity and support physical activity.

Community facilities have traditionally been delivered through separate funding streams and agency responsibilities, such as education, sport and recreation, or local government services. This fragmented approach often limits coordination between agencies and can lead to facilities being planned and managed in isolation. As a result, access to community facilities is not always equitable, and opportunities to share spaces and maximise community benefit may be missed.[113]

In growth areas, early identification, protection and coordinated delivery of social infrastructure ensures facilities are available when residents need them, rather than retrofitted later.

The planning system and coordinated investment play a central role in delivering social infrastructure by setting long-term strategic direction and applying land use controls and policy settings that guide where facilities such as schools, health services, community hubs and recreation spaces are located, how they are scaled, and how they function within neighbourhoods. This provides a consistent framework for aligning infrastructure investment with community needs, access and long-term population change.[113, 114]

Councils can encourage preparation of social infrastructure assessments to help inform the Primary Infrastructure Schemes or other infrastructure planning in housing growth areas pursuant to the *Planning, Development and Infrastructure Act 2016*. The Department for Housing and Urban Development is preparing standardised benchmarks for social infrastructure provision.

Councils should forward plan for the relocation or construction of new community facilities within accessible locations such as activity centre and adjacent to parks and other public open spaces. This enhances opportunities for outdoor activity, incidental exercise and social interaction, supporting both physical and mental health outcomes.

National policy reinforces the importance of this approach. For example, the *2021 Australian Infrastructure Plan* emphasises the value of integrated, place-based planning and cross-sector collaboration in delivering efficient social infrastructure that supports healthy, connected and resilient communities.[115]

Regional instruments such as the *Greater Adelaide Regional Plan* planning policies seek alignment of housing, services and transport to enhance access and future liveability. Exploration of how social infrastructure can be delivered through the SA planning system is evolving and include new *Planning and Design Code* overlays, a land use concept plan showing social infrastructure facilities and an associated Infrastructure Scheme.[9, 116]

By codifying such principles into statutory planning tools, governments can ensure social infrastructure is delivered early, equitably and in locations that maximise value to communities.

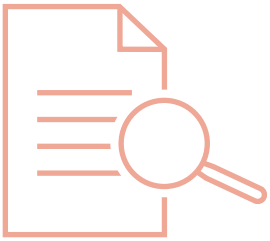
Co-locating facilities with complementary services can create convenient, multifunctional hubs that maximise efficiency and resource use. Shared or co-located facilities can be:

- owned, funded or leased by government or the community
- used by more than one group
- used for a range of activities that share buildings, rooms or open spaces at different times.[110]

There is strong evidence that co-location and/or community hubs have a positive impact on social networks, the social determinants of health and on individual empowerment, and mental health and wellbeing.[112, 116]

Sharing community facilities for the delivery of council and government services allows multiple agencies or non-government organisations to operate from a single, accessible location, improving service coordination and convenience for residents or other users. This approach reduces duplication, maximises public investment benefit and fosters stronger partnerships and potential collaboration between service providers.[117]

Case study: Trinity College Roseworthy community hub



As part of the Roseworthy Township Expansion, collaborative planning between Light Regional Council and landowners secured the delivery of new education and community infrastructure alongside residential growth. Trinity College Roseworthy, opened in 2024, sits within an accessible location adjacent to the emerging town centre and integrates indoor learning spaces with outdoor sport and play facilities that serve both school and wider community use.

A social infrastructure deed established at the planning stage ensured that a sports oval, courts, clubrooms, playground and associated parking are provided for community access outside school hours, strengthening local amenity and everyday activity opportunities. By linking these facilities to surrounding development and future walking, wheeling and bike riding connections, the project illustrates how early integration and shared use can support access to activity-rich destinations, encourage daily physical activity and contribute to social inclusion as the township grows.

There is a spectrum of co-location options from sharing a library within a school building to a fully integrated regional community hub with a mix of uses and facilities (often part of a town or activity centre). As an example, schools are often centrally located within communities and include facilities such as sports fields, courts and playgrounds that can encourage residents to be physically active. Access to these spaces out of school hours makes children and adolescents more likely to engage in physical activity. This is particularly important in communities that lack public or private recreation or community facilities.[118]

Access: easy, safe and inclusive for everyone.

- Provide easy, affordable and convenient access for everyone.
- Design and deliver safe walking, cycling and public transport connections to facilities.
- Minimise physical and social barriers to encourage regular use.

Community facilities are most effective when they are easy to reach for people of all ages and abilities. Prioritising locations within walkable catchments, activity centres or near frequent public transport reduces travel time, supports higher participation and improves equitable access across the community. Locating facilities within established transport and community networks supports long-term use, strengthens social connection and helps ensure facilities remain adaptable and well used over time.[119, 114]

To support accessible community facilities, the following design elements should be considered:

- step-free access from street, parking and public transport
- clear, legible wayfinding and consistent signage
- logical, barrier-free internal circulation
- accessible toilets, change facilities and drinking fountains
- seating with armrests and varied seat heights
- good lighting levels and glare control
- non-slip, even walking surfaces and kerb-free thresholds
- hearing support systems in meeting and performance spaces
- visual contrast for edges, doors and signage
- safe drop-off zones and accessible parking close to entries.

Additional consideration is needed to ensure community facilities work well for children, older people and people using mobility devices, who may experience environments differently and face higher barriers to access:

- Adopting universal design principles enhances accessibility, ensuring facilities can respond to demographic shifts and support people of all abilities.
- For children, safe and intuitive layouts, clear sightlines, age-appropriate amenities and proximity to toilets, drinking water and shaded rest areas support independent use and supervision.
- For older people, short walking distances, frequent seating, good lighting, acoustic comfort and easy wayfinding reduce fatigue, support confidence and encourage ongoing participation.
- For people using wheelchairs, prams or mobility aids, generous circulation spaces, smooth gradients, wide doorways, accessible counters and lift access where required are essential to enable independent, dignified use.
- For families with babies, private, comfortable and safe breastfeeding and change facilities.

Minor Works Building Community Centre, City of Adelaide. Flexible community facilities support use by local groups and private hire, helping maximise participation and community benefit. Photo: supplied by Intermethod, photography by Natalya Boujenko.

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Designing with these needs in mind improves comfort and usability for everyone and helps ensure facilities remain welcoming, inclusive and well used across the life course.

Undertaking an access and/or walkability audit can help identify barriers and ensure that walking, wheeling and bike riding routes, road crossings, and entry points are safe and convenient. This is also covered in the 'Movement networks' section of this guide.

Adaptability: multi-purpose and flexible.

- Design flexible layouts that support multiple uses and easy reconfiguration.
- Future-proof buildings and infrastructure to enable upgrades without major rebuilds.
- Strengthen indoor–outdoor connections to expand usable space and support varied activities.

Flexible and adaptable design ensures community facilities remain relevant and functional as population needs, technologies and social behaviour change over time. A well-designed facility should be capable of accommodating multiple uses and evolving service models, allowing for spaces to be repurposed without significant structural changes. For example, a community centre may host early childhood programs during the day, recreational activities in the evening, and local markets on weekends. This flexibility optimises investment, extends the lifespan of facilities, and ensures that public assets continue to meet the diverse and changing needs of the community.

Facilities benefit from modular layouts, movable partitions and multipurpose rooms that support a range of uses over time. Centralising shared amenities such as storage, toilets and parking reduces duplication and operating costs. Early collaboration between planners, designers and service providers helps embed long-term adaptability from the outset, reducing the need for costly future retrofits and disruption to community use.[107]

Councils and government agencies can promote flexibility by including adaptable design standards into local policies and frameworks. This can future-proof community facilities, ensuring they continue to deliver social, economic, and environmental value for generations.[119] Design considerations include:

- modular and reconfigurable spatial layouts and furniture systems
- capacity to support a range of activities and user groups
- day and evening activation potential

Uni Hub, City of Playford, Elizabeth. This flexible, multi-use study and learning space open to students from all universities, delivers local education and community facility that supports access to higher education close to home.
Photo: supplied by Intermethod, photography by Natalya Boujenko.

- flexible indoor–outdoor connections that allow spaces to expand or contract
- street interface activation and visibility
- passive surveillance and strong connections to surrounding open space
- multi-use zones integrating social, recreational and active functions
- sustainability and whole-of-life performance of building systems.

Facilities reach their full value only when they are actively programmed and used. Regular activities such as exercise classes, community markets, cultural events, learning programs and informal gatherings help establish consistent use, build local ownership and keep spaces lively throughout the week. Without purposeful programming, even well-designed facilities can remain under-used outside peak periods, limiting their health, social and economic return. Programming also provides a practical way to support intercultural participation by creating shared experiences that reflect local cultures, languages and traditions, helping facilities feel welcoming, relevant and inclusive for a diverse community.

Case study: Salisbury Community Hub

The Salisbury Community Hub shows how well-located, co-located community facilities can improve access, support active travel and strengthen local identity. Located next to the Salisbury Interchange and surrounding commercial areas, the hub is easily reached by walking, cycling and public transport, reducing car dependence and supporting equitable access across the community.

By bringing together the library, customer services and civic functions in a flexible, multipurpose facility, the hub operates as a true neighbourhood destination. It also acts as a bold catalyst for renewal of the Salisbury city centre, supporting a growing local community. Active frontages, strong pedestrian connections and high-quality public space encourage everyday use, social interaction and passive surveillance, demonstrating how community infrastructure can support healthier movement patterns, urban renewal and long-term community resilience.

Salisbury Community Hub, Salisbury City Centre. Modern shared civic space where people can meet, learn and participate in community life. Photo: supplied by supplied by baukultur and HASSELL, photography by Lillie Thompson.

Case study: Yitpi Yartapuultiku Aboriginal Cultural Centre

The Yitpi Yartapuultiku, Aboriginal Cultural Centre in the heart of Port Adelaide transforms previously degraded and underutilised land into a place of healing, reflection and community connection. Designed with deep respect for Country, the entire site weaves Kaurna cultural references into the landscape, creating a gentle, grounding experience that allows visitors to feel a sense of peace even within an urban setting.

Flexible indoor and outdoor spaces support gathering, cultural activity and everyday community life. Native plantings and sculpted landforms draw people outside — inviting them to walk slowly, wander freely, and experience the calming influence of nature. The landscape encourages families to explore at their own pace: prams move easily through the space, and “free range kids” can climb, touch, listen, and play in ways that foster confidence, curiosity, and independence.

A pioneering Living Shoreline project restores the river edge to a more natural condition, introducing a small beach that encourages biodiversity and helps create a cooler, healthier environment. This revitalisation — guided by the Elders Working Group and the Council’s Aboriginal Advisory Panel is shaped through extensive engagement - brings back the rhythms and textures of Country, strengthening cultural connection while improving ecological health.

The centre has become a cherished community destination: a peaceful place to walk, rest, gather, and experience nature; a place where children can feel free and families can reconnect; a place that supports physical activity, dance, social connection and emotional wellbeing for both Port Adelaide residents and the wider community. In doing so, it contributes to healthier hearts, stronger cultural identity, and a deeper sense of belonging on Country.

Yitpi Yartapuultiku Aboriginal Cultural Centre. A community and cultural destination designed in partnership with Kaurna Custodians, providing spaces for learning, gathering and cultural exchange within a landscaped riverside setting that connects people to Country. Photo: by Peter Bennetts.

Retrofit ideas

Community facilities can become under-utilised or no longer fit for purpose as buildings age and community needs change, particularly in established neighbourhoods experiencing demographic shifts. Where facilities remain well-located but no longer meet contemporary requirements, a staged retrofit approach can extend their life and value before replacement is considered.

Retrofit options may include:

- upgrading access, lighting, acoustics, safety and universal design features
- reconfiguring internal layouts to support shared and flexible use
- expanding floor area or adding modular extensions to increase capacity
- improving energy efficiency, thermal comfort and water performance
- retaining valued building elements while introducing new functions
- strengthening connections to footpaths, cycle routes, public transport and open space (the Heart Foundation's community walkability checklist can be used to assess routes within 800 metres of community facilities)[31]
- activating building edges and entrances to improve visibility and safety
- integrating digital infrastructure to support modern service delivery and bookings
- enhancing outdoor areas for overflow activity and community use
- co-locating complementary services within existing sites to maximise use.

Any retrofit should be guided by an understanding of local context, current and future community needs, building condition and performance, access constraints, and feedback from users and service providers. This investment delivers practical improvements, equitable access and long-term value for the community.

Monitoring and evaluation

Understanding whether community facilities are delivering health, access and social outcomes requires ongoing monitoring of how facilities perform and how people use them. A balanced approach combines spatial data, facility audits and community feedback to inform future investment, programming and design improvements.

Information to gather for monitoring and evaluation may include:

- Access and catchment coverage: proportion of residents within a safe walking distance of facilities and frequent public transport.
- Travel behaviour: mode of arrival by walking, wheeling, bike riding and using public transport and private vehicles.
- Usage patterns: frequency of visits, peak and off-peak use, length of stay and program participation.
- Equitable participation: diversity of users by age, gender, ability, cultural background and household type.
- Public realm quality: regular audits of lighting, shade, seating, safety, wayfinding and universal access.
- Building performance: thermal comfort, energy and water use, maintenance costs and adaptability over time (see 'Building' section of this guide).
- Community experience: user satisfaction, perceived safety, sense of belonging and barriers to access gathered through surveys and engagement.
- Health and wellbeing signals: self-reported physical activity, social connection and participation linked to facility use.
- Programming effectiveness: attendance levels, inclusivity of activities and responsiveness to local needs.
- Network performance: connectivity to surrounding walking, cycling and public transport routes.

Where applicable, indicators should be aligned with existing local wellbeing dashboards and reporting systems to support consistent tracking and transparency over time.

Buildings

Buildings shape how we move, rest and live each day. Well designed buildings can encourage everyday movement, provide healthy indoor environments and support people's health across their lives.

Indoor environments play a critical role in shaping health outcomes. Decisions about ventilation, natural light, moisture control and opportunities for movement within buildings have lasting effects on cardiovascular health, mental wellbeing and levels of physical activity. Designing buildings with health in mind can reduce exposure to risk factors such as poor air quality and dampness, while supporting active living across the population.[120, 121, 122, 123]

People living in Australia spend around 90% of their time indoors. Poor indoor environments contribute to cardiovascular and respiratory disease and discourage everyday movement.

The goal for our buildings:

Design, deliver and continually adapt buildings that enhance and activate the public realm, foster physical activity and social connection throughout daily use, and provide healthy indoor environments.

Nightingale Bowden. Street-level cafés with openable façades activate the public realm, creating welcoming places for people to gather and supporting everyday social interaction in the neighbourhood. Photo: supplied by LANDSKĀP, photography by Duncan McKenzie.

In contrast, well-designed buildings can reduce disease risk, support mental wellbeing and enable healthier, more active lives.[124, 125, 126, 127]

The Healthy Active by Design digital toolkit highlights that:[128]

- Building design and its relationship to the street can increase natural surveillance, improving safety and perceptions of safety.
- Safe, well-lit entrances that face the street and connect directly to footpaths, car parks and nearby public transport encourage walking and other forms of active travel.
- Indoor environmental quality — including thermal comfort, air quality, ventilation, lighting and noise control — affects worker comfort, productivity and health.
- Access to daylight, views and nature within buildings supports wellbeing and workplace satisfaction.
- Green building design can improve indoor air quality, which is associated with better cognitive function and fewer health symptoms.

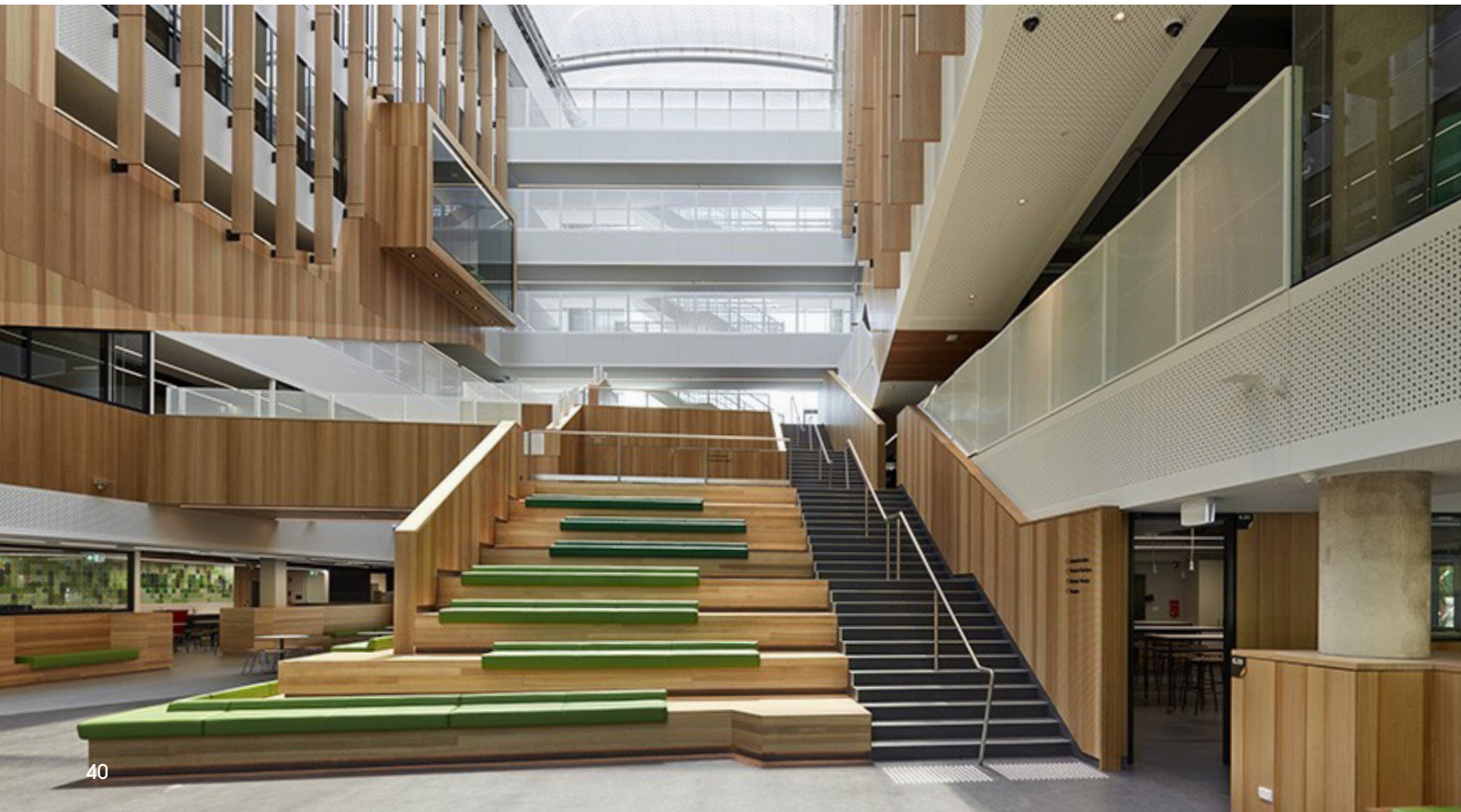
Case study: Adelaide Botanic High School

Adelaide Botanic High School is the first vertical (four or more storeys) government secondary school in South Australia. It opened in 2019, combining new floorspace with the conversion of an existing 1960s-era building.

The architect sought a strong connection to place with the neighbouring botanic garden and adopted biophilic design principles to create a distinctive environment for students within a multi-storey campus. These principles include the living system concept, where the building can evolve and adapt as an ecosystem rather than a static structure, along with good natural light, the use of organic materials (such as wood and stone), and interior green spaces to improve air quality and support student productivity.

The school achieved a 5 star Green Star rating and incorporates innovative learning spaces, on-site energy generation, acoustic separation and co-mingled recycling measures. The school is directly linked to the North–South Bikeway along Frome Street and active travel routes through the Adelaide Park Lands, encouraging cycling, walking and public transport use.

Adelaide Botanic High School. Atrium at Adelaide Botanic High School provides a naturally lit internal space that supports movement, social interaction and connection to greenery within a vertical school environment. Photo: supplied Sam Noonan, photography by Sam Noonan.



- Internal building layout can influence movement patterns, affecting levels of physical activity, sitting and opportunities for social interaction.
- Sit–stand workstations help reduce prolonged sitting during the workday.
- Visible, well-designed stairwells and point-of-decision prompts encourage people to choose stairs over lifts and escalators.
- End-of-trip facilities support active travel and physical activity before, during and after work.

Key principles

Considerations for planning and designing health-promoting buildings

Spatial design: encourages movement and social connection.
Indoor environment: healthy, comfortable and well ventilated.
Natural light and nature: daylight, views and access to greenery.

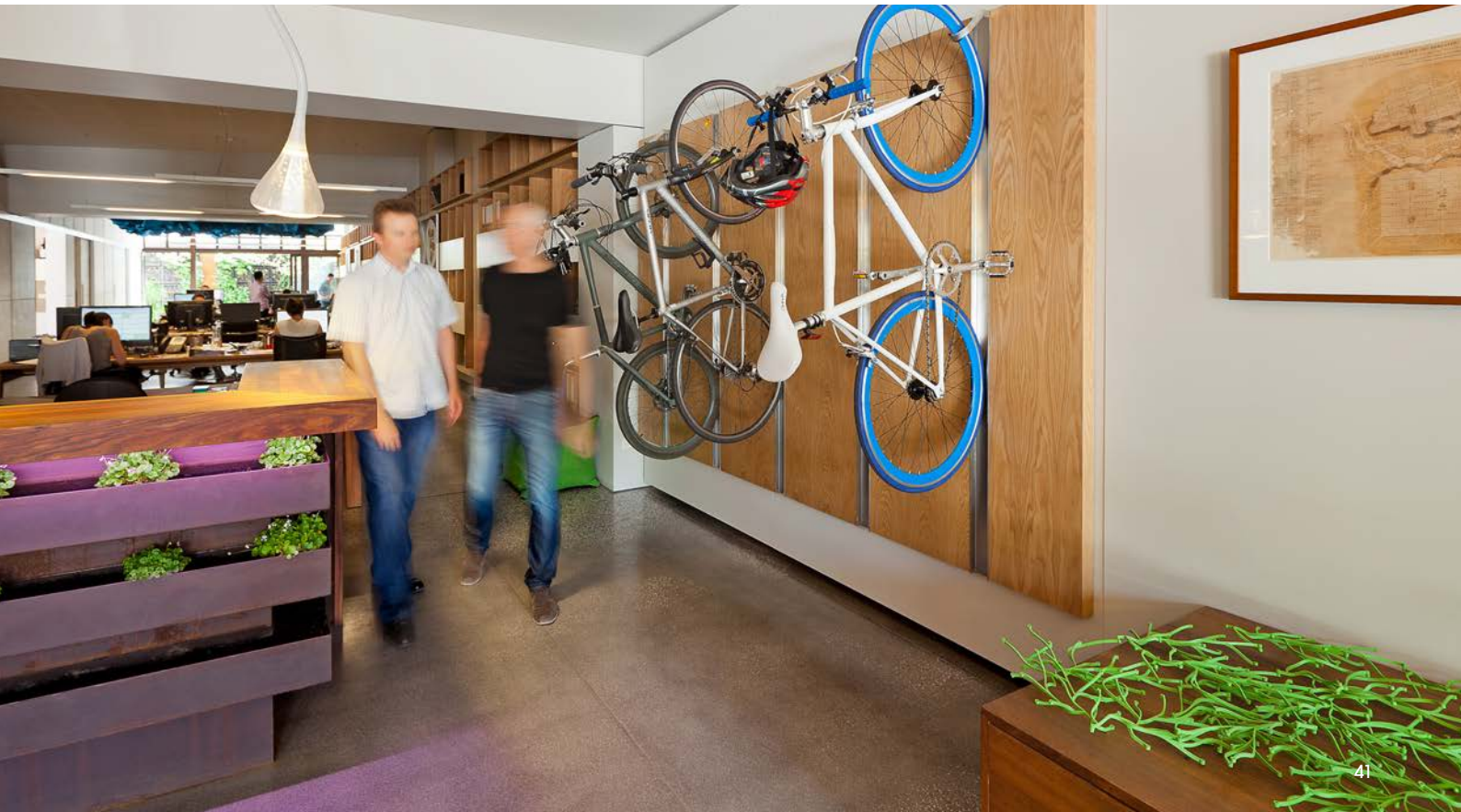
Spatial design: encourages movement and social connection.

- Design prominent, attractive stairways that encourage everyday movement.
- Provide end-of-trip facilities and integrate buildings with nearby public transport.
- Create spaces that support social interaction as well as areas for privacy and retreat.
- Ensure good natural surveillance.
- Design flexible and adaptable spaces.

Building design influences whether everyday movement is easy or overlooked. For example, staircases that are visible, well lit and pleasant to use are more likely to be chosen over lifts. Regular stair climbing is associated with better cardiovascular outcomes, with people who climb at least 20 floors per week experiencing a lower risk of stroke.[83, 129]

Internal spatial layouts also shape routine activity levels. When circulation routes — such as corridors linking work areas, central stairways between floors, and shared paths to kitchens, meeting rooms and amenities — are designed to incorporate movement into daily tasks, buildings can support regular physical activity as part of normal routines rather than relying on individual motivation alone.[76, 130]

98 Halifax Street. Bicycle storage integrated within an open office encourages active travel while supporting a flexible workplace that promotes movement and everyday activity. Photo: supplied by Oxigen, photography by Sweet Lime Photo.



Access to end-of-trip facilities influences how people travel to and from buildings. Secure bicycle parking, showers, change rooms and lockers are linked to higher rates of cycling and more frequent active travel, supporting healthier travel choices as part of everyday life.[131]

Decisions about building location and design also affect transport behaviour and perceptions of safety. Locating buildings near public transport routes enables car-free travel, while active frontages and windows overlooking streets and public spaces can improve safety and encourage walking and other forms of everyday movement.[132]

The organisation of space within buildings influences social interaction, everyday movement and mental wellbeing. Layouts that support both connection and privacy helping to reduce social isolation and associated cardiovascular health risks.[130, 133]

Shared spaces such as communal areas, outdoor settings and common facilities influence how often people interact and form social connections. At the same time, access to quieter spaces for rest, focus and recovery supports individual wellbeing and balances the demands of social environments.[133]

The amount of space available per person also affects comfort and health. Adequate spatial provision can reduce crowding and support physical and mental wellbeing, while flexible layouts allow buildings to respond to changing needs over time, including evolving work patterns, household structures and community uses.[126]

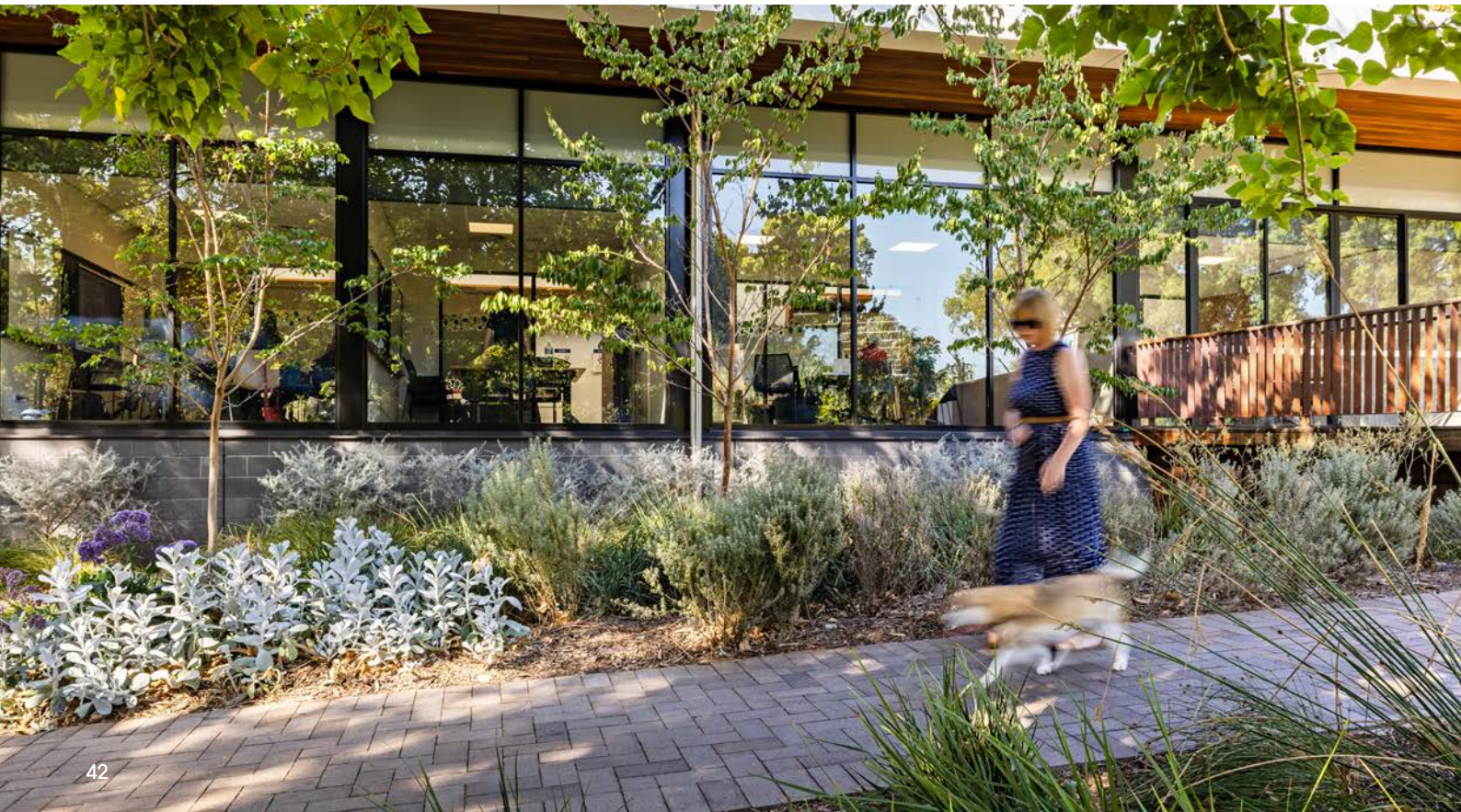
Indoor environment: healthy, comfortable and well ventilated.

- Provide well-ventilated indoor environments with effective air filtration.
- Incorporate natural ventilation where possible.
- Maintain comfortable indoor temperatures through passive and active design strategies.
- Select low-emission materials and finishes.
- Reduce indoor pollutants and moisture to protect air quality and health.

Indoor air quality is a key contributor to cardiovascular and respiratory health. Inadequate ventilation and exposure to indoor air pollutants are associated with higher risks of cardiovascular disease, respiratory conditions and reduced cognitive function.[127, 134]

How buildings are ventilated and sealed influences both exposure to pollutants and access to fresh air. Ventilation systems should meet Australian standards

Mitcham Library and Brown Hill Creek, Mitcham. Terraced deck connects the library to the restored natural creek and surrounding public open space, creating a welcoming civic space for community gatherings, nature play and everyday recreation.
Photo: supplied by ASPECT Studios, photography by Sweet Lime Photo.



to help dilute indoor contaminants, while effective filtration and well-designed building envelopes can limit the entry of outdoor pollution, particularly near busy roads or in areas with poor ambient air quality.[124, 127, 135]

Indoor air quality is also shaped by material choices and building operation. Specifying low volatile organic compound (VOC) materials, paints, furnishings and cleaning products at the design stage reduces sources of indoor air pollution, while operable windows and passive ventilation, where appropriate, can support air circulation and give occupants greater control over their indoor environment.[127, 134]

Smoke-free policies protect air quality in a range of public buildings, public transport and private vehicles (if an under 16 is present). In South Australia, smoking and vaping indoors are prohibited under the *Tobacco and E-Cigarette Products (Smoking Bans) Amendment Regulations 2023*, and the location of any designated smoking areas, if any, away from building entrances and air intakes helps prevent smoke infiltration.[136]

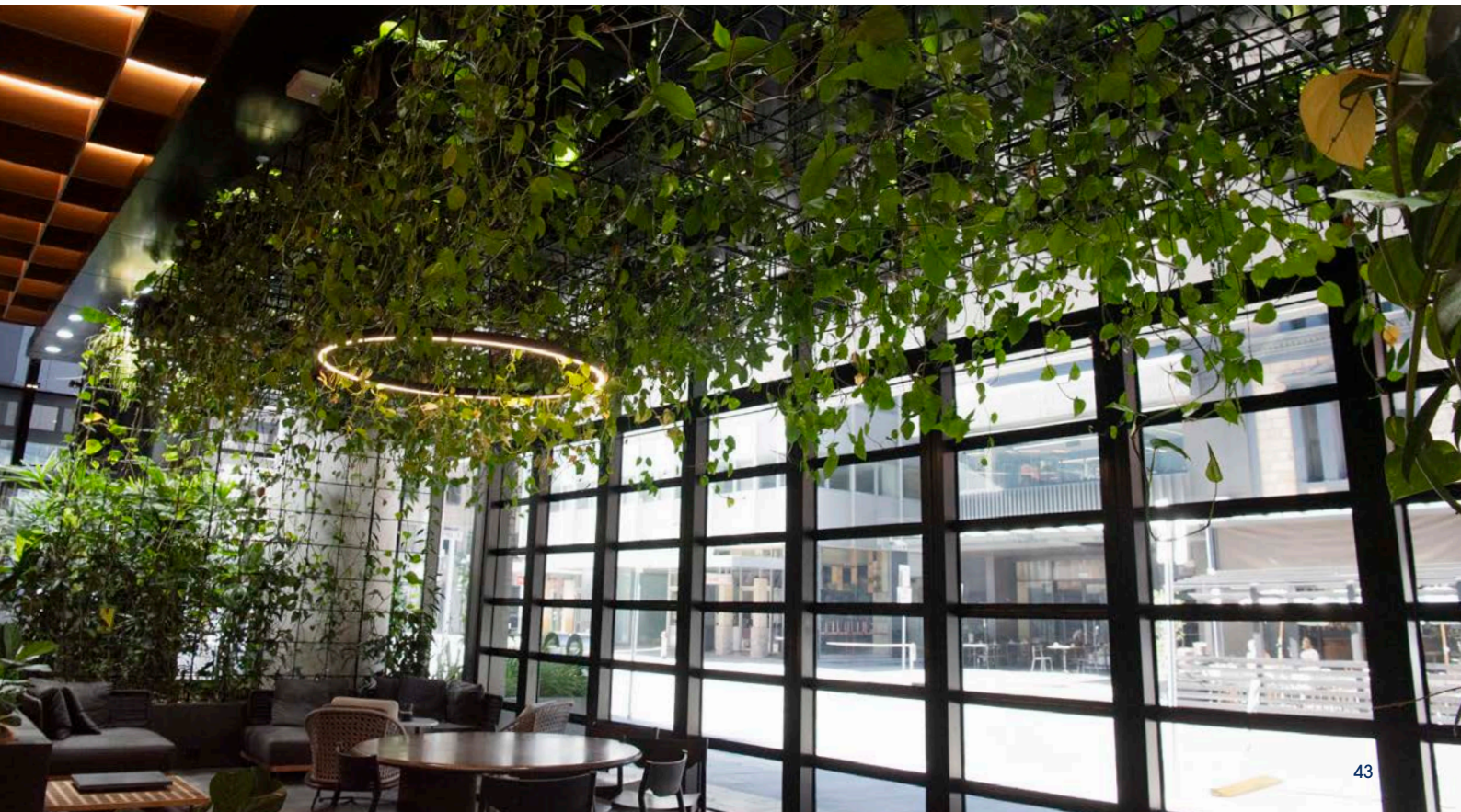
Maintaining comfortable indoor temperatures is critical for health, comfort and productivity. Extreme heat or cold places additional cardiovascular stress on everyone, particularly vulnerable groups such as older adults, young children and people with existing health conditions.[137, 138]

Buildings that support optimal indoor temperatures, generally between 18 and 26 °C, can protect health and wellbeing year-round.[137] With rising temperatures and more frequent extreme weather events due to climate change, such as heat waves, thermal resilience should be built in from the design stage. Passive strategies such as effective insulation, shading, building orientation, thermal mass and balanced heating and cooling systems can reduce reliance on mechanical systems while maintaining comfort efficiently.[138, 139, 140, 141, 142]

Design strategies needs to consider local climate, however, general approach includes:

- Orientation: optimise winter sun while limiting summer overheating.
- Windows: balance heat, light, ventilation and views.
- Ventilation: capture cooling breezes and reduce air leakage.
- Ceiling fans: provide efficient, low-energy cooling.
- Insulation: minimise unwanted heat gain and loss.
- Thermal bridging: reduce unintended heat transfer.
- Thermal mass: moderate indoor temperatures, especially day–night swings.

83 Pirie Street, Adelaide. Lobby with openable louvred windows and biophilic design enables natural ventilation, while transparent ground-floor café and meeting spaces activate the street and encourage social interaction and pedestrian movement.
Photo: supplied by Intermethod, photography by Natalya Boujenko.



- Shading: control heat, light and glare.
- Roof colour and absorptance: adjust heat absorption levels.
- Roof space ventilation: release excess heat and moisture.[143]

Natural light and nature: daylight, views and access to greenery.

- Optimise daylight within indoor spaces.
- Provide visual connections to nature.
- Incorporate biophilic design elements.
- Provide access to outdoor spaces.

Access to natural light, views of nature, and connections to outdoor spaces support mental health, regulate circadian rhythms, and reduce stress — factors that contribute to cardiovascular health and aid recovery from illness.[144, 145]

Daylight and outdoor views are beneficial in all spaces and essential where people spend extended periods. Thoughtful window placement and sizing can maximise natural light while controlling glare and solar heat gain to maintain visual and thermal comfort.[146]

Incorporating vegetation and other biophilic design elements into buildings can strengthen connections to nature and support psychological and cardiovascular health. Green infrastructure — such as green roofs, green walls, planted courtyards and indoor plants — can improve air quality, help reduce urban heat and provide restorative benefits through contact with nature. Accessible outdoor spaces adjacent to buildings also support rest, social interaction and everyday engagement with nature, complementing the health benefits of daylight and views.[144]

Design strategies to increase access to greenery in buildings include:

- Incorporate indoor planting schemes, including potted plants, planted atriums or indoor gardens in shared spaces.
- Install living green walls or vertical gardens within lobbies, circulation spaces and workplaces.
- Provide rooftop gardens, terraces or accessible green roofs for occupants to access nature during daily routines.
- Design buildings to maximise window views to trees, gardens, parks or planted courtyards.
- Integrate internal courtyards, winter gardens or planted light wells that bring vegetation and daylight deep into buildings.

84 Halifax Street, City of Adelaide. Façade and ground-floor café engage directly with the footpath, connecting the building with street life and encouraging social connections, supporting healthier neighbourhoods. Photo: supplied by Oxigen, photography by Corey Roberts.

- Use balconies, planter boxes and green façades to introduce vegetation on upper floors.
- Incorporate biophilic materials and natural textures (e.g. timber, stone) to complement vegetation and reinforce connection with nature.
- Provide shared outdoor green spaces, such as landscaped breakout areas, terraces or courtyards linked directly to indoor work or living areas.

These strategies align with evidence showing that exposure to indoor plants, greenery and views of nature can reduce stress, improve mood, support cognitive performance and enhance wellbeing in buildings. These outcomes are important for cardiovascular health, as chronic stress is a recognised risk factor for heart disease.[147, 148, 149]

Other building considerations

Other important factors that contribute to healthy building design include moisture control, universal design, material selection, water quality, emergency preparedness and ongoing maintenance.

Dampness and mould in buildings are linked to respiratory problems, allergies and worsening cardiovascular conditions, making moisture control essential for healthy indoor environments. Effective control measures include good drainage and waterproofing to prevent water intrusion, managing indoor humidity, providing targeted ventilation, and using moisture-resistant materials in areas at higher risk of dampness.[150, 151, 152]

Buildings should ensure universal design and accessibility so they are usable by people of all ages and abilities, supporting ageing in place and social inclusion.

Robust maintenance schedules should be established to ensure building systems continue to support health over time, including regular testing of air quality, water quality, and heating, ventilation and air conditioning (HVAC) systems to identify and address issues before they affect occupant health.

Retrofit ideas

- Ventilation upgrades: improve ventilation systems and air filtration to enhance indoor air quality.
- Stairwell improvements: enhance stairway visibility, lighting, and aesthetics to encourage use.
- End-of-trip facilities: add bicycle parking, showers, and change facilities to support active travel.
- Moisture remediation: address existing dampness and mould issues through improved drainage, ventilation, and waterproofing.
- Lighting retrofits: upgrade to efficient, high-quality lighting with appropriate controls to improve visual comfort and reduce energy consumption.
- Acoustic improvements: add acoustic treatments to reduce noise transmission and create quieter indoor environments.
- Green infrastructure additions: install green walls, roofs, or increase indoor plantings to improve air quality and provide biophilic benefits.
- Climate adaptation: improve building envelopes, insulation, and shading to better manage thermal comfort in a changing climate.
- Accessibility upgrades: improve accessibility through ramps, lifts, and universal design modifications to support ageing populations.

Monitoring and evaluation

- Monitor indoor environmental quality, including air quality, temperature, humidity, daylight and ventilation.
- Track building systems performance to ensure ventilation, filtration and thermal systems operate as designed.
- Collect occupant feedback on comfort, air quality and usability of spaces.
- Monitor building use and behaviour patterns, such as stair use, active travel and occupancy patterns.
- Track health and wellbeing outcomes where feasible, including indicators related to comfort, productivity and absenteeism.
- Review performance against relevant building health and sustainability standards or certifications.

Destinations

Destinations are places people go to meet daily needs and take part in community life. They include shops, services, businesses, education, recreation and civic facilities. Well-planned destinations give people everyday reasons to walk, connect and spend time locally, turning movement into a natural part of daily life.

Planning for the built environment in South Australia continues to underuse strong evidence showing that walkable, well-connected and destination-rich neighbourhoods support healthier, more resilient communities. Research across planning and public health consistently highlights several key elements that encourage physical activity: density, diversity of destinations, accessibility, distance to transit and design quality. [23, 75, 153, 154, 155, 156]

The goal for planning destinations:

Plan neighbourhood destinations as local hubs by clustering essential services, healthy food outlets, employment, education and recreation within walkable and cyclable catchments, supporting healthy behaviours and stronger community life.

Ngutungka Henley, the Henley Square Library and Community Centre, Henley Beach. Centrally located community destination among shops, cafés and the beachfront. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

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By locating daily destinations close to where people live, planning can reduce the need for long trips, support sustainable and healthy travel choices, and shape neighbourhoods and wider council areas around accessible, vibrant hubs of activity. While many destinations are traditionally concentrated in town or activity centres and along mainstreets, providing well-distributed, neighbourhood-level destinations is essential to encourage everyday physical activity, minimise travel demand, and strengthen local community connections.[157, 158]

Thoughtful destination planning also builds local identity and vitality, transforming streets and small spaces into places people value and return to. The concepts of placemaking are covered in 'Sense of place' section of this guide.

There is a clear community mandate for well-located destinations, with 94 per cent of respondents in the national What Australia wants: Neighbourhood design survey of 3,000 people identifying destinations as important to their ideal neighbourhood, including 62 per cent rating them as very important — the highest-rated outcome across the eight focus areas of *Healthy Active by Design*.[75]

The Heathy Active by Design digital toolkit highlights that:[159]

- Walkable neighbourhoods with mixed land uses, connected streets and appropriate density support walking, public transport use and stronger community wellbeing.
- Living within 400–800 metres of a mix of destinations is associated with higher levels of walking and other forms of active transport.
- Mixed-use centres that combine shops, services, schools and recreation provide convenient focal points for daily needs and encourage active travel.
- Mainstreet-style centres support local economies while promoting walking and social interaction, whereas car park-dominated centres discourage pedestrian activity.
- Access to nearby schools, recreation facilities and supermarkets is associated with higher physical activity levels and healthier diets.

Table 5 lists common destination types people visit in everyday life. The table also identifies where guidance on planning and designing these destination types is provided elsewhere in this guide.

Table 5. Examples of common destination types that support healthy, walkable neighbourhoods.

Category	Destination types	Guide sections with further information
Retail and food	Supermarkets, grocery stores, fresh food markets, cafés, restaurants, neighbourhood shops, pharmacies	Healthy food
Education	Early learning centres, childcare, primary and secondary schools, universities, colleges, TAFE, community learning hubs	Community facilities
Community and civic	Community centres, libraries, council offices, community hubs, cultural centres, places of worship	Community facilities
Recreation and sport	Parks, playgrounds, sports fields, recreation centres, gyms, swimming pools, walking trails	Public open space Movement networks
Health and wellbeing services	General practice clinics, health centres, allied health services, pharmacies, wellbeing services	
Employment and services	Offices, workplaces, business districts, government services, co-working spaces	
Public transport	Train stations, tram stops, bus interchanges and stops	Movement networks
Social and cultural venues	Theatres, galleries, museums, cinemas, music venues, event spaces	Sense of place
Fresh food and local produce	Farmers' markets, community gardens, food cooperatives	Healthy food
Everyday services	Post offices, banks, childcare services, hairdressers, laundries and other local services	

Key principles

Considerations in planning for destinations

Diversity: a mix of everyday destinations within walkable neighbourhoods.
Access: direct, safe and connected.
Quality and comfort: people-orientated design.

Diversity: a mix of everyday destinations within walkable neighbourhoods.

- Provide a mix of everyday destinations within local neighbourhoods.
- Locate destinations at distances that match how often people use them.
- Plan for diverse needs across ages, households and lifestyles.

Case study: Prospect Road

The upgrade of Prospect Road was completed by the City of Prospect in partnership with the Government of South Australia in 2019. Works included wider footpaths, new street trees, improved lighting, landscaping, public art, outdoor dining areas and upgraded pedestrian crossings to enhance the main street environment. Traffic calming measures were also introduced, including a reduced 40 km/h speed limit and street design changes to slow vehicles and prioritise pedestrians.

The project demonstrates how street design can support healthier communities. The upgraded corridor prioritises walkability, safety and public life, making everyday physical activity — such as walking to shops, cafés and services — a natural part of daily routines.

Pedestrian-friendly features including seating, landscaping, improved footpaths and crossings, and outdoor dining helped transform the street into a place for people rather than simply a transport route. This supports social interaction and community connection, which contribute to improved mental and physical wellbeing. The Prospect Road upgrade illustrates how well-designed mainstreets can strengthen local destinations while creating built environments that make healthy choices easier.

Prospect Road, Prospect. A lively mainstreet activity centre, with cafés, shops, services, trees, landscaping, seating and public art creating a vibrant destination. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Streets that support higher densities and a diverse mix of destinations are consistently associated with higher levels of pedestrian activity. A broad range of land uses is important because different groups rely on and value different destinations, meaning only a varied mix can support regular walking across the whole community.[156, 160] For example, cafés and restaurants may attract younger people, schools and playgrounds support families, and everyday services such as shops or hardware stores meet the needs of other residents.[26]

The destinations also need to cater to the different lifestyle functions, such as living, working, healthcare, education, shopping (commerce/groceries) and entertainment.

The list below summarises destination types that have been shown to support higher levels of active transport and broader health benefits, including cognitive function and brain health:

- public transport stops
- employment and job centres
- commercial destinations such as local shops, supermarkets and greengrocers
- schools and education facilities
- public open spaces, including local park networks and larger destination parks that offer a range of recreational functions, balancing everyday proximity with access to higher-order facilities. [25, 79, 157, 161, 162]

Walking behaviour varies by destination type, requiring distance-sensitive planning rather than a single walkable catchment. Everyday, high-frequency uses such as cafés and convenience retail most strongly support walking when located within about 400 metres of homes, while a broader mix of services including supermarkets, schools and community facilities, can be comfortably accessed within around 800 metres. Larger or more specialised destinations, such as major retail or recreation facilities, can still support walking at distances up to around 1,200 metres where they offer higher utility or multiple purposes.[158, 162, 163, 164]

The distance considered walkable by people varies by destination type and age, with people aged over 50 reporting increased willingness to walk further than other age groups.[165] Planning should therefore distribute destinations in layers, aligning distance with function to support walking for a range of daily needs.

Access: direct, safe and connected.

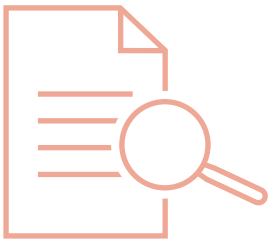
- Provide direct, safe and continuous walking, wheeling and bike riding connections between destinations.
- Ensure destinations are well served by public transport and shared mobility.

Marshmallow Park, Pityarilla, Adelaide. Interactive nature play alongside traditional playground equipment, with nearby BBQ areas, tennis and basketball courts, makes this park a popular destination for families with children of all ages.
Photo: supplied by Intermethod, photography by Natalya Boujenko.

Planning neighbourhoods so that essential daily destinations can be reached safely and comfortably by walking, wheeling or bike riding is now a core principle in both new developments and the renewal of established areas. This approach is commonly described by terms such as the 15-minute city, 20-minute neighbourhoods, 400-metre neighbourhoods and, in South Australia's *Greater Adelaide Regional Plan*, living locally.[9] The COVID-19 experience highlighted the importance of strengthening neighbourhood resilience by minimising the need to travel long distances to access essential services, further reinforcing the need for compact and diverse neighbourhoods.[161, 166]

Retail precincts benefit from walkable, well-designed environments, with higher demand and value for ground-floor and corner locations that offer good accessibility, strong design quality and greenery. In these settings, people prefer short distances between destinations and, for more leisurely trips, routes that provide amenities, activity and interest.

Case study: Henley Square



Henley Square, located at the junction of Henley Beach Road and the foreshore in Henley Beach, was reconstructed in 2016. The square functions as both a local meeting place and a regional destination, providing safe, attractive and legible public spaces that encourage people to walk, linger and connect with the beachfront. The redesign places people first by prioritising pedestrian movement and comfort. Features include a large water play area, open lawn, interactive public art, a pavilion, sculptural timber seating, and cafés and restaurants that open directly onto the square. Reduced vehicle dominance, generous walking areas, seating, shade and clear sightlines improve accessibility for people of all ages and abilities.

Direct connections to the beach, jetty and surrounding streets support everyday walking, while active frontages create natural surveillance and a welcoming environment that encourages longer stays and social interaction. Traffic calming along Seaview Road, Main Street and Military Road, together with a new public plaza and upgraded public realm, helps balance movement and place. Additional cycle parking and wider footpaths further support walking, wheeling and bike riding, contributing to a vibrant and inclusive coastal centre. The square connects directly to the Adelaide Coast Park, linking to a regional coastal walking and bike riding network.

Henley Square, Henley Beach. Modern shared civic space where people can meet, learn and participate in community life. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Close proximity to everyday destinations, such as grocery stores, cafés, restaurants, banks, retail shops and public transport stops, supports higher levels of walking among local residents and contributes to more active, vibrant centres.[156]

Neighbourhood walkability is now a core consideration in urban planning and is commonly assessed using walkability indices. Walkability describes the extent to which the built environment is pedestrian-friendly and enables walking.[167] Further information is included in the 'Walkability section' of this guide. 'Movement networks' section of this guide also provides information about street network design that promotes walking, wheeling, bike riding and the use of public transport.

Quality and comfort: people-first design.

- Prioritise people-first street and centre design.
- Provide comfort and amenity, including shade, seating, lighting and greenery.
- Maintain high design quality and upkeep to support walking and place vitality.

The visual quality of destinations, and the routes leading to them, plays an important role in shaping people's experience of place and their willingness to walk or ride a bike to reach them. Well-designed environments that are visually engaging, comfortable and easy to navigate can encourage people to spend more time in centres and public spaces. Key design features that contribute most strongly include:

- aesthetic quality of the area
- maintenance and presentation of building façades
- visual complexity and interest (for example, landmarks, architectural variation and distinctive building forms)
- continuous, unobstructed footpaths with minimal interruptions
- tree canopy and landscaping that provide shade and visual amenity
- active or transparent ground-floor frontages that create activity and natural surveillance
- human scale (design elements proportioned to people, with building heights, façades and street elements that relate comfortably to pedestrians)
- enclosure (a sense of spatial definition created by buildings, trees or other vertical elements that frame the street or space and make it feel welcoming and comfortable rather than exposed).[156, 161, 167]

Refer to the 'Sense of place' section of this guide for further information.

Hutt Street, City of Adelaide. City mainstreet that includes cafés, local services, a library and bike parking, providing a mix of everyday destinations. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Retrofit ideas

- Review current state policies and strategies for the evidence-informed integrated transport, land use and infrastructure planning actions/ focus and provide recommendations to the government for the next cycle of updates.
- Advocate for infill development to increase population densities.
- Advocate for current policies to incorporate clear equity considerations in built environment features that support community health, such as access to everyday destinations, and introduce evaluation mechanisms to assess whether equity goals are being achieved.
- Zone for a broad mix of uses near homes, jobs and schools and require neighbourhood-level destinations in growth areas.
- Co-locate community, health and civic facilities with retail, and integrate services within existing public buildings and libraries.
- Support mainstreet and centre-based development over stand-alone sites.
- Introduce small-scale local services into residential areas, including the sale of fresh food.
- Encourage community-led activation of local streets and centres.
- Repurpose underused sites for neighbourhood-level destinations through Renew Adelaide or other regeneration models.
- Enable mixed-use infill along existing main streets and corridors.
- Improve walking, wheeling and bike riding links to centres and parks by upgrading crossings, lighting, shade and surfaces. Work with shopping centres to strengthen active transport connections and provide convenient bike parking from the street to shopfronts.
- Improve access to public transport near established destinations.
- Evaluate typical car parking occupancy and convert surplus car parking to active uses or local amenities.
- Support pop-up retail, markets and community uses in vacant spaces.

Monitoring and evaluation

- Include measurable spatial indicators to evaluate diversity and types of destinations in local areas and use data to inform planning focus to make improvements.
- Introduce cross-departmental liveability measures that can be used to assess built environment improvements and outcomes over a long term.
- Map destinations against walking catchments (400 metres, 800 metres, 1,200 metres).
- Track access to essential destinations by neighbourhood and cohort.
- Monitor walking, wheeling, bike riding and public transport mode share over time.
- Assess land use mix and changes within centres and neighbourhoods.
- Review public transport coverage, frequency and stop accessibility.
- Measure pedestrian activity and dwell time in centres.
- Audit walking route quality, safety and comfort to destinations.
- Track access to healthy food outlets across suburbs.
- Collect community feedback on destination use and barriers.
- Use equity indicators to identify gaps in access and investment.

Movement networks

Movement networks that prioritise active and public transport lead communities toward healthier, more connected and sustainable futures.

A movement network is the interconnected system of streets, roads and paths that accommodates people walking, wheeling, bike riding, on-road public transport, goods transportation, emergency vehicles and private cars. It connects places and activities, and allows people and goods to reach their intended destinations.

While travel by car is often associated with personal comfort, convenience and freedom, movement networks designed solely for car travel come at a considerable cost to both people and society. Car dependence contributes to air and noise pollution, increased greenhouse gas emissions, and a decline in public health through sedentary lifestyles. Built environments that are shaped around movement of cars rather than people lead to congestion,

The goal for our movement networks:

Facilitate safe and convenient travel within neighbourhoods through accessible, integrated and connected walking, wheeling, bike riding and public transport routes.

Bowden Village, Bowden. A parent and child ride along a safe, tree-lined shared path showing how designed streets can support active travel and everyday physical activity for all ages. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

reduced access for those without cars and the loss of connected public spaces. Prioritising active and public transport, and ensuring genuine choice in how people travel, paves the way for cleaner air, healthier lives, and more inclusive, connected communities.[168, 169, 170, 171, 172]

Walking, wheeling and bike riding integrate physical activity into everyday life while producing negligible emissions. Well-designed active travel networks support healthier daily movement, improve physical and mental wellbeing and help reduce stress. They also contribute to climate resilience by lowering car dependence, reducing emissions and improving air quality.[168, 169]

The Healthy Active by Design digital toolkit highlights that:[173]

- Connected street networks support walking for transport across all age groups.
- Continuous footpaths strongly support walking and active transport across all age groups.
- Cul-de-sac and curvilinear street layouts with limited connections discourage walking by increasing travel distances and reducing route choice.
- Safe streets, lower traffic speeds and good traffic management increase walking, particularly for children and older adults.
- Safe and connected routes to school increase walking and cycling among children and young people.
- Low traffic residential streets can support informal play and outdoor activity for children.
- Accessible public transport stops with shade, shelter and seating encourage walking and support a wider range of users.
- Cycling increases with dedicated infrastructure, improved road safety, secure bike parking and end-of-trip facilities.
- Attractive streets with trees, good lighting and well maintained surroundings encourage walking.
- Safe environments supported by crime prevention through environmental design (CPTED) measures improve perceptions of safety and support walking.
- High levels of car parking can reduce walking, cycling and public transport use.

Felixstow Reserve, Felixstow. Bike storage. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Key principles

The key principles for active travel movement networks across best-practice design guides and strategies, are connectivity, safety, equity and accessibility, comfort, and attractiveness.[174, 175, 176, 177, 178]

Considerations for movement networks

Connectivity: direct links between key destinations.
Safety: personal security and minimised road crash risk.
Equity and accessibility: for all ages, abilities, and income levels.
Comfort and attractiveness: high-quality networks and supporting infrastructure.

Connectivity: direct links between key destinations.

- Create direct and logical routes that link key destinations.
- Ensure consistent design across priority networks.
- Respond to local context and needs.
- Plan urban transport as an integrated system.
- Co-locate land uses and transport.

Connectivity describes how easy it is to move between locations, such as home and work, along the movement network. Good movement networks are highly connected, with many links between origins and destinations.[179] Connectivity is achieved and measured through a number of urban form features, including frequency and complexity of intersections, block length and block density.[180]

Street network design must ensure connectivity for all modes of travel while recognising the need to prioritise different modes in different contexts. For example, high priority bus routes may include dedicated lanes and priority intersections, while other streets may mix buses with general traffic. Because people often switch between modes throughout the day, networks should support seamless transitions and safe, efficient movement for everyone.

Designing connected walking, wheeling and bike riding networks relies on setting clear priorities for each travel mode and responding to the role and character of each street.[181] The movement and place approach, now widely embedded in Australian transport planning, provides this framework by aligning street design with local context and function.[182, 183]

In South Australia, the *Active Travel Design Guide* applies the movement and place approach to deliver continuous, legible networks for walking, wheeling and bike riding. It sets out context-sensitive design guidance for different street types, traffic conditions and place intensity, including at intersections where continuity is most often lost.[18]

Contemporary approaches to transport planning deliver the greatest benefit when urban transport systems are functioning as an integrated system, rather than as a set of separate modes or isolated routes. This means connecting networks directly to everyday destinations, such as schools, workplaces, community facilities and leisure spaces, so movement supports daily life. When well connected, movement networks do more than move people; they strengthen the public realm, with higher walking activity linked to increased social interaction and local economic vitality.[169, 183]

This creates particular opportunities at interchanges and busy public transport waiting areas that can be designed as safe, attractive spaces that support both movement and social interaction while strengthening the economic and social vitality of surrounding areas.[22]

Effective transport networks should provide safe, direct connections between modes, ensuring easy access to transit stops, secure bicycle parking, and seamless transfers between buses, trains and trams. Integrating shared micro-mobility options, such as e-scooters and bike share systems, further enhances first- and last-mile connectivity, making active and public transport more convenient, attractive and widely used.

Frome Street Bikeway, Adelaide. A protected bike lane is part of the Adelaide's continuous North-South Bikeway providing safe and convenient facility in the city. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

Safety: personal security and minimised road crash risk.

- Design safe infrastructure.
- Implement the safe system approach.
- Address personal security needs and crime prevention.

Road safety

Road safety is a major national and state policy priority, with Australia working towards zero deaths and serious injuries on roads by 2050 under the *National Road Safety Strategy 2021–2030*,[184] a commitment reinforced by the *South Australian Road Safety Action Plan 2023–2025*, which sets out actions to deliver safer roads, vehicles and road use across the state.[185]

Safety is a major barrier to bike riding, with perceptions of risk varying by gender; women are generally less likely than men to take up bike riding due to safety concerns.[186] Improving the safety and comfort of infrastructure is therefore one of the most effective actions local governments can take to support active travel. This includes providing high-quality bicycle lanes and paths, continuous footpaths, safe crossings and traffic calming measures.[168, 187, 188] Physically separated bike paths and lanes are preferred by both people riding bikes, and those using other modes, and their presence, length and network density have been shown to increase cycling levels.[189]

Managing vehicle speeds is also critical to creating safer movement networks for all road users. Road safety efforts should align with the safe system approach, which anticipates human error and promotes safe roads, vehicles, speeds and road users.[185, 190] A tiered approach to urban speed limits, widely advocated to reduce the risk of death or serious injury, is as follows:[184, 185, 190]

- maximum 30 km/h — roads/road sections with possible crashes between cars and vulnerable road users
- maximum 50 km/h — roads/road sections with intersections with possible side-on crashes between cars
- maximum 70 km/h — roads/road sections with possible frontal (head-on) crashes between cars.
- maximum 100 km/h — roads/road sections with no likelihood of side-on or frontal crashes between cars.

These speed recommendations, are informed by evidence on the risk of fatality for pedestrians struck by a vehicle, as illustrated in Figure 3.

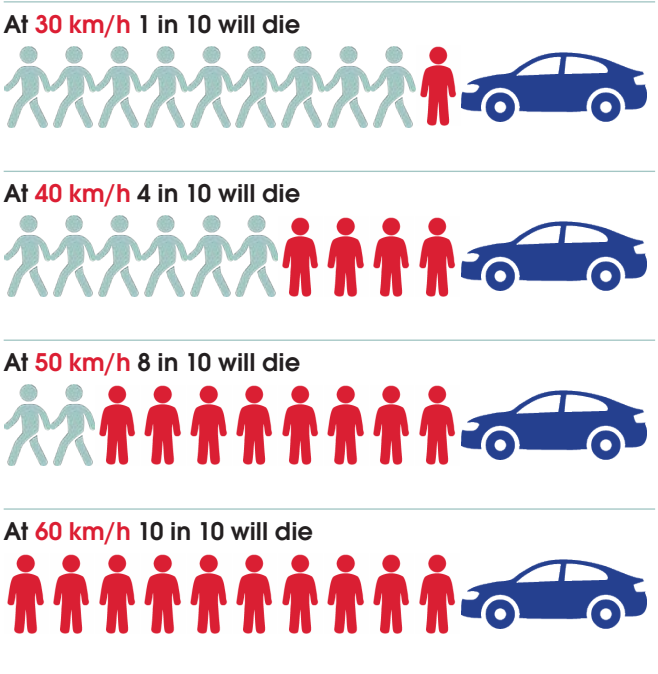


Figure 3. The risk of death if pedestrians are hit by a car.
Source: Adapted from Word Health Organization.[191]

Prospect Road. Accessible public transport supports equitable travel choices, enabling people of all ages and abilities to move safely and independently. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

While there is growing international consensus on the need for lower urban speed limits to improve safety, implementation across cities has been uneven. In Adelaide, some residential areas have adopted 40 km/h limits, but 50 and 60 km/h remain common across much of the urban street network. Many arterial roads that serve local destinations continue to operate at 60 km/h, although some roads, such as Prospect Road, have reduced speeds to 40 km/h to better support safer, more walkable environments.

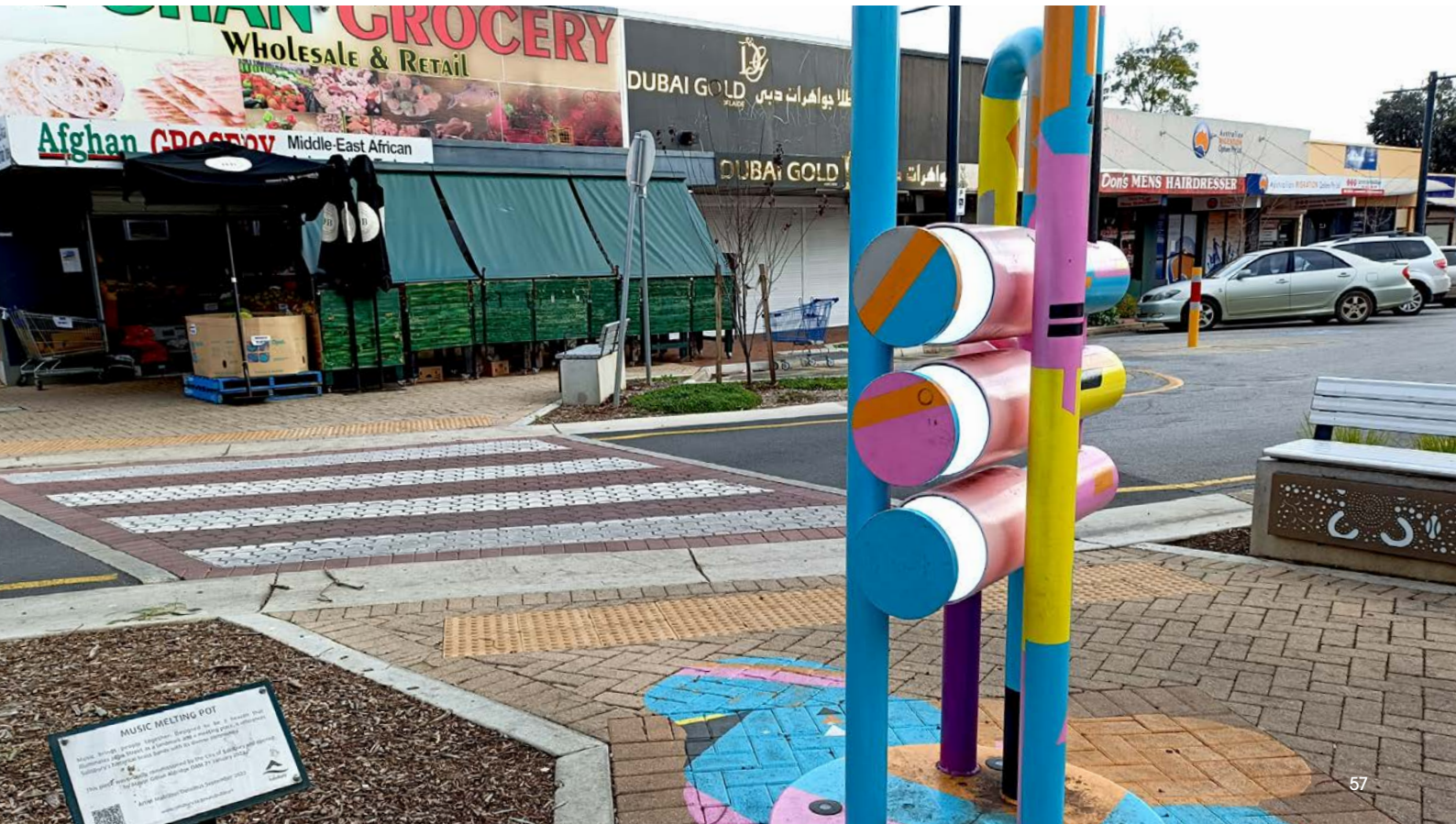
There are various approaches to managing speeds across road networks. According to the World Health Organization review of effective interventions, the following measures have been proven to deliver results:[190]

- Establishing speed limits appropriate to the road users:
  - setting speed limits for new and existing roads based on safe system principles
  - introduce 30 km/h speed limits in residential streets and areas with high pedestrian activity.
- Building or modifying roads to include features that reduce speed:
  - speed humps and chicanes
  - lane narrowing
  - refuge islands and kerb extensions
  - footpaths and cycling lanes
  - raised pedestrian crossings
  - raised intersections
  - gateway treatment at entrances to towns and villages.
- Enforcing speed limits.
- Raising awareness about the dangers of speeding through public campaigns.

In suburban areas, local area traffic management is a well-established approach in South Australia for improving safety, access and neighbourhood amenity through targeted traffic measures. By combining evidence, community input and staged delivery, it provides a practical and effective framework for introducing lower speeds and achieving safer local streets.[192, 193]

In addition to speed management, the safety of infrastructure is critical to the performance of movement networks. Safe design must manage differences in speed, mass and vulnerability between road users, recognising that large speed differentials significantly increase the risk and severity of crashes. Well-designed infrastructure, such as protected cycling facilities, protected crossings, continuous footpaths and traffic-calming measures, helps balance the needs of different modes while reducing conflict and supporting safer, more inclusive streets.

John Street, Salisbury. The Music Melting Pot street sculpture celebrates Salisbury's multicultural heritage while creating an interactive landmark within a pedestrian-friendly, traffic-calmed street. Photo: supplied by Intermethod, photography by Natalya Boujenko.



Personal security

Neighbourhood crime levels and perceptions of safety are influenced by a range of personal, social and built environment factors, and affect how likely people are to walk, wheel and bike ride. CPTED is a multi-disciplinary approach that reduces crime and fear of crime through built environment interventions, recognising that features such as visibility, natural surveillance, social control and place attachment are strongly associated with people feeling safe in their surroundings. CPTED strategies reduce crime by making places safer, discouraging offending before it occurs, and strengthening community ownership so people feel confident using and looking after shared spaces.[194, 195] Elements of CPTED include:[196, 197]

- natural surveillance
- natural access control
- territorial reinforcement
- maintenance and management.

Contemporary CPTED has evolved beyond a narrow focus on physical security to a more holistic, third-generation approach that recognises public safety as closely linked to wellbeing, social connection and the quality of everyday environments. This shift reflects growing evidence that crime prevention is strongest where people's basic needs are met and places are cared for, inclusive and actively used. For public realm designers, this means creating environments that support natural surveillance through activity and visibility, encourage regular use and social interaction, clearly signal appropriate access, and prioritise maintenance, comfort, and access to green space, ensuring that streets and public spaces are connected to community life, which helps sustain positive safety outcomes over time.[196]

Equity and accessibility: for all ages, abilities and income levels.

- Design for all ages and abilities.
- Add spaces for play.
- Encourage physical activity.

Networks designed with equity and accessibility in mind are planned for safety and comfort of people of all ages and physical abilities, of all races and ethnicities, of all gender identities, of all incomes and those without access to a car. It removes physical, social and financial barriers that limit everyday movement. Streets designed this way support wider participation in daily life and create places that are welcoming and functional for everyone.

The internationally adopted seven principles of universal design provide a strong foundation for addressing accessibility in design:[198]

1. Equitable use: the design is useful and marketable to people with diverse abilities.

Bowden Urban Village, Bowden. Children enjoying a protected shared path helps to gain wheeling confidence in safety. Photo: supplied by the Heart Foundation, photography by Sweet Lime Photo.

2. Flexibility in use: the design accommodates a wide range of individual preferences and abilities.
3. Simple and intuitive use: the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. Perceptible information: the design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. Tolerance for error: the design minimises hazards and the adverse consequences of accidental or unintended actions.
6. Low physical effort: the design can be used efficiently and comfortably and with a minimum of fatigue.
7. Size and space for approach and use: appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

These principles also translate well to promoting equity in movement networks. Accessible transport, walking, wheeling and bike riding networks support independence, participation and dignity for people of all ages and abilities, while improving access to

Case study: Beulah Road, Norwood

Beulah Road was upgraded as a bicycle boulevard to create a safer, low-speed street that prioritised walking, wheeling and bike riding while maintaining local vehicle access. Traffic calming measures, narrowed lanes, shared roadway markings and clear entry treatments slowed vehicle speeds, discouraged through-traffic and reinforced priority for those riding bikes or scooters. Wayfinding elements, water sensitive greening and distinctive pavement treatments improved legibility and signalled the route as a valued destination within the cycling network, supporting comfortable everyday travel and encouraging regular physical activity across a wide range of ages and abilities.

The project was shaped through close collaboration with local residents and aligned with council cycling strategies to respect neighbourhood character and existing greenery. Public artwork celebrating local cycling history strengthened identity and community ownership. The boulevard improved safety and increased everyday walking, wheeling and bike riding, demonstrating how targeted, lower cost street upgrades can deliver meaningful health, social and environmental benefits without major infrastructure investment.

Beulah Road, Norwood. Raised platforms calm traffic speeds. Photo: supplied by Intermethod, photography by Natalya Boujenko.

work and social life, increasing network efficiency, and delivering wider social and economic benefits for the community as a whole.[199, 200]

Achieving these outcomes also requires meaningful engagement with communities. Co-designing movement networks with people from a broad cross-section of the community — including different ages, abilities, income levels, genders and ethnicities — helps ensure infrastructure responds to real needs, supports inclusive access and builds local ownership and trust in the places where people live and move. For further information, see 'Sense of place' section of this guide.

Play and physical activity

Streets and local movement networks can support children's physical activity, play and independent mobility. Access to safe, attractive streets and public spaces near home is associated with higher levels of outdoor play and physical activity among children.[29, 201]

Design considerations include:[29, 202]

- supporting children's independent mobility: safe walking, wheeling and bike riding routes
- designing streets as places to stay as well as move: encouraging informal play and social activity
- reducing traffic speeds, prioritising pedestrian movement and providing frequent resting opportunities
- ensuring universally accessible surfaces
- providing safe crossings and visual cues that encourage active use of space
- incorporating informal and dedicated play elements, to invite spontaneous interaction.

Some of these aspects are covered in more detail in 'Destinations' and 'Public open space' sections of this guide.

Comfort and attractiveness: high-quality networks and supporting infrastructure.

- Deliver high-quality, attractive movement networks.
- Provide clear and frequent wayfinding.
- Provide supporting infrastructure including seating, lighting, water fountains, public toilets, bike parking and end-of-trip facilities.
- Integrate green infrastructure and water-sensitive urban design.
- Use and promote sustainable materials and maintenance practices.

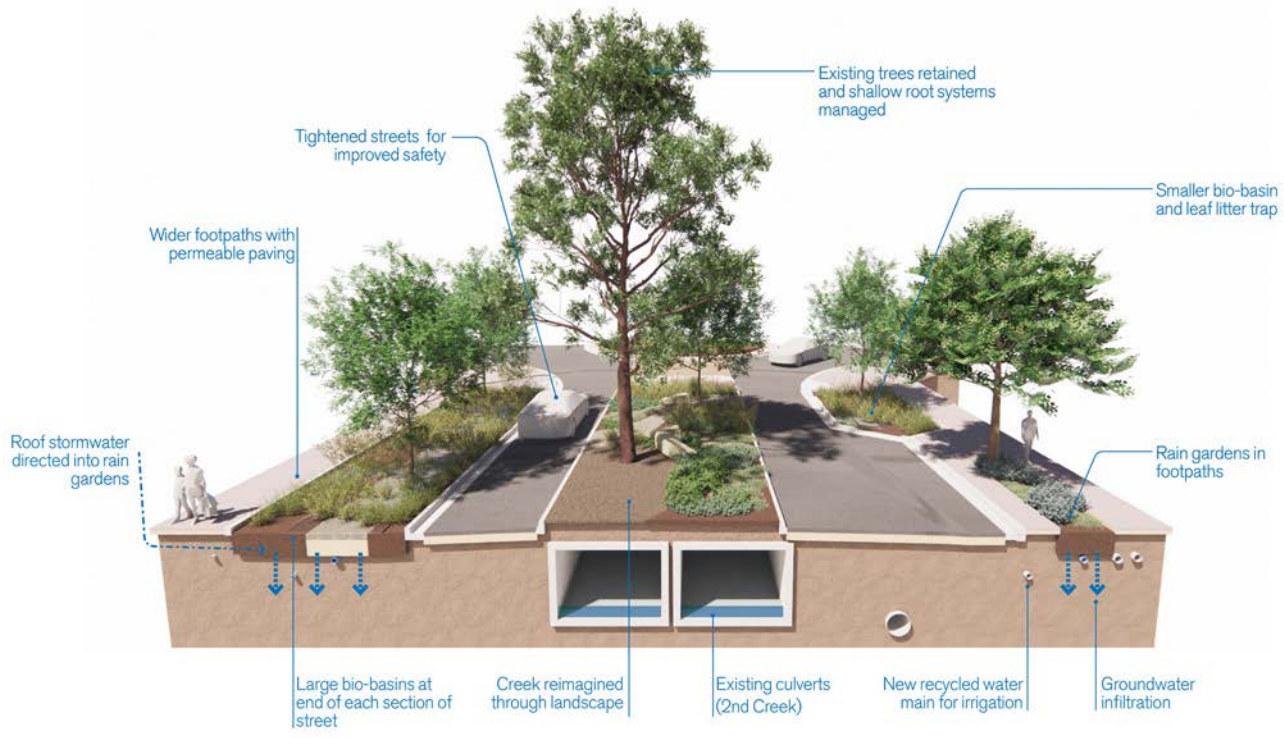


Figure 4. Water sensitive urban design schematic for St Peters Street upgrade.
Graphics: by LANDSKĀP for the City of Norwood, Payneham and St Peters.

Comfort and attractiveness shape whether people choose to walk, wheel, ride a bike or spend time in streets and public spaces.

Design quality

The aesthetic presentation of streets promotes active transport and recreational walking, particularly for adults and older adults.[203] *The Principles of Good Design* resource by Office for Design and Architecture SA provides guidance on best-practice design.[204]

Greening

Trees within cities provide a multitude of environmental, economic, social, health and wellbeing benefits.[203] Urban greening, in general, leads to the improvement of thermal and carbon environment in cities.[205] Trees cool the air by releasing moisture and providing shade, helping to lower street temperatures and reduce the urban heat island effect.

The *SA's Active Travel Design Guide* provides practical recommendations for incorporating greening along movement networks, including

Case study: Wood-Weller Bikeway, Unley

The Wood-Weller Bikeway is a north–south local street route in the City of Unley that links the City of Mitcham to the south at Cross Road and Charles Walk/Glen Osmond Trail and Mike Turter Bikeway to the north. It has been progressively implemented since 2017.

Council installed a series of single lane slow points with bicycle bypass and landscaping at regular intervals (typically about 100 metres apart) plus changes to on-street car parking. Post project evaluation showed a reduction in average daily traffic volumes of 31% and a 22% reduction in 85th percentile speeds from 45.7 km/hr to 37.6 km/hr.

The City of Unley is progressing the final stage of this bicycle route as part of its ongoing program to expand active travel, guided by the *Walking and Cycling Plan 2022–2027*.[206] Sustained investment in infrastructure for people walking, wheeling and bike riding has contributed to Unley achieving of the highest participation rates in these modes in Greater Adelaide.

Wood-Weller Bikeway, City of Unley. Single lane slow points reduce traffic speeds while providing a protected bypass for people riding. Photo: supplied by the City of Unley, photography by Sam Oster, Silvertrace.

guidance on suitable plant types based on space availability and design considerations for water sensitive urban design (WSUD) and biodivesity sensitive urban design integration.[18] In Adelaide's dry climate, WSUD is important for managing stormwater, supporting urban greenery and cooling streets. Figure 4 shows an example of how WSUD elements were integrated into street design for recently upgraded St Peter's Street.

South Australia has long recognised the value of trees and landscaping. The Government of South Australia outlines the many benefits of urban greening in its *Urban Greening Strategy,* including:[7]

- financial savings and gains
- urban cooling
- health and wellbeing benefits
- provision of ecosystem services
- habitat for animals
- attracting residents and businesses
- cultural value.

The commitment to urban greening is further demonstrated through the adoption of an urban tree canopy target, monitored using LiDAR (light detection and ranging) imaging across the metropolitan area.

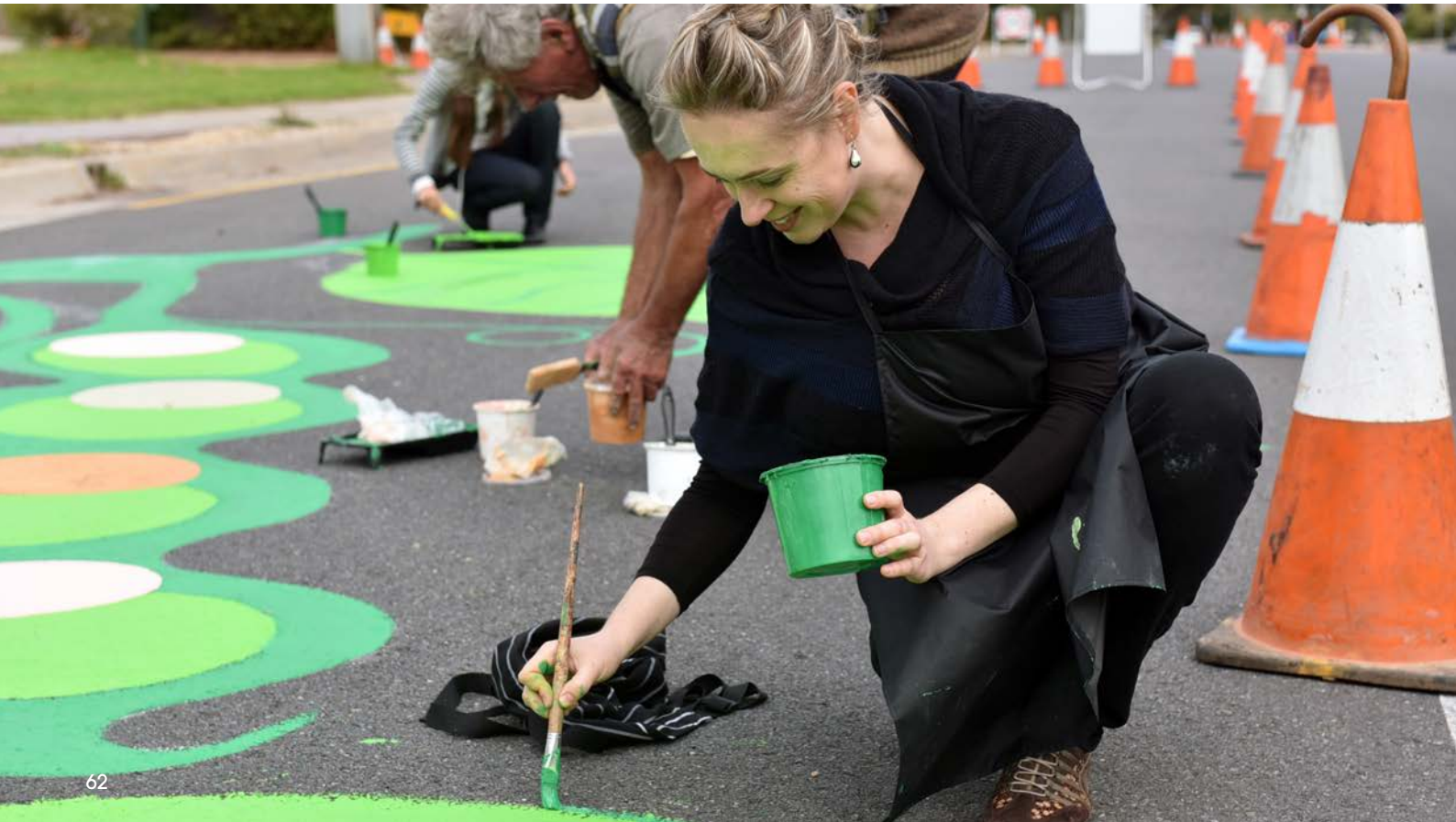
Comfort and supporting infrastructure

Comfort and supporting infrastructure such as wayfinding, seating, lighting, water fountains and public toilets help make streets and paths more comfortable, safer and inviting to use. These features reduce barriers to walking by providing rest opportunities, improving visibility and orientation, and ensuring people feel secure and supported during everyday trips. Pedestrian-friendly supporting infrastructure is linked with higher levels of walking, particularly for adults and older adults, by improving comfort, accessibility and the overall walking experience.[172, 207]

Retrofit ideas

- Promote awareness and participation through education, community events and workplace or school programs that normalise walking, wheeling, bike riding and the use of public transport as appealing everyday choices.
- Invest in travel education and planning through apps, targeted campaigns, and area-wide or destination-based initiatives to encourage and make sustainable travel choices easy.[7]
- Make healthy active travel visible and celebrated, using campaigns, art, and

Roopena Street, Ingle Farm. Community street mural created as part of the Living Neighbourhoods project to encourage slower driving. Photo: supplied by Intermethod, photography by Paul Vivian.



storytelling that highlight its health, social, and environmental benefits. Frame cycling as a high-status, public-good activity and build a pro-cycling coalition of officials and advocates to shift social attitudes.[187]

- Advocate for the provision of separated bike lanes, safe pedestrian crossings and measures that manage or restrict car use, such as parking controls and petrol prices.[168]
- Partner with councils on community projects that calm traffic and enhance greening, such as introducing local art, landscaped medians or verges, and murals to strengthen place and local identity.
- Trial quick-build solutions, such as temporary kerb extensions, pop-up bike lanes and parklets, to test changes before permanent investment.

Monitoring and evaluation

A range of assessment frameworks are available to evaluate the performance of movement networks, each focusing on different users, modes or scales — from individual streets to neighbourhoods and broader urban areas. These include tools such as healthy streets framework,[28] public space public life studies,[30] walkability scores and liveability indices. These and other frameworks can be used to evaluate movement networks, with varied indicators and data collection methods, but share a common aim of improving access, safety and everyday movement for people using them. Exploring different approaches can help identify those best suited to the context and purpose of the assessment.

Other monitoring and evaluation ideas include:

- Measure numbers of users walking, wheeling and bike riding to observe changes over time, especially before and after street upgrade projects.
- Track equity outcomes by assessing access for different ages, genders, abilities and neighbourhoods, not just overall usage.
- Gather community feedback through regular surveys and local audits to understand comfort, safety and usability.
- Identify key desire lines for walking, wheeling and bike riding, and evaluate the accessibility and safety of existing crossing facilities.
- Assess how easily people can navigate to nearby destinations, like public transport stops, fresh food outlets, schools, shops, playgrounds, and libraries, and consider wayfinding improvements to clearly indicate walking, wheeling and bike riding routes.
- Engage local traders and community groups to assess the movement networks, using the Heart Foundation's community walkability checklist.[31]

Housing diversity

A diverse mix of housing supports people at different life stages and household circumstances, helping communities remain inclusive, adaptable and resilient over time.

Housing diversity refers to the variety of dwelling types, sizes and tenures within a neighbourhood. Housing diversity comprises:[208]

- Dwelling size and choice: mix including detached dwellings; group, row or attached dwellings, flats and apartments; retirement housing, student accommodation, co-living; and adaptable homes. These should allow for a range of dwelling sizes and number of bedrooms per dwelling.
- Allotment size: various allotment options to enable delivery of a more diverse mix of dwellings.
- Affordability: housing across a range of price points, including affordable housing and other buying models to suit different incomes.

The goal for our housing mix:

Provide housing choice through a mix of various types, tenures and sizes to meet the dwelling needs of a diverse community contributing to active and vibrant places.

Victoria Square, Tarntanyangga, Adelaide. The City of Adelaide's commitment to increasing its housing diversity and residential population will encourage more active travel in the Adelaide CBD. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

- Tenure: mix of ownership, private rental, social housing and affordable housing models.
- Location and density: a mix of neighbourhood density options across urban lands that support living locally outcomes.

South Australian suburbs and towns do not yet achieve the design quality, residential densities or access to services needed to support liveable, healthy communities.[154]

Systemic housing supply issues, changing demographics, different rates of household formation and population growth have contributed to declining home ownership and an increase in long-term private renting. Australia has not benefited from a responsive housing supply system. There is a need to deliver more diverse housing that better matches evolving housing demand. Currently, the dominance of detached houses (around 72%) in Australia limits housing choice and restricts access to affordable and suitable homes for many households.[209]

The concept of the missing middle refers to a range of low-rise, medium-density housing types that sit between detached suburban houses and high-density apartment buildings. These housing forms include duplexes, terrace houses, townhouses, manor houses and small multi-dwelling developments. The *Greater Adelaide Regional Plan* identifies the missing middle as a key opportunity to increase housing diversity within established suburbs and new communities.[9] Expanding missing middle housing can improve affordability and provide a broader mix of dwelling types close to services, transport and community infrastructure. A greater mix of housing forms can support more sustainable neighbourhoods by enabling higher residential densities around activity centres, open space and public transport corridors. Missing middle housing is seen as an important strategy to accommodate population growth without relying solely on outward urban expansion.[9, 210]

Providing a greater mix of housing types is increasingly important because it helps to:[211, 212]

- improve housing choice and affordability by increasing supply
- support people to live in homes that suit their needs at different stages of life
- enable older people living in South Australia and smaller households to downsize and age in place
- support stable, connected communities by allowing people to move within their neighbourhood as their needs change
- stimulate economic development by attracting investment, supporting local businesses and skilled workforce attraction.

Well-designed, accessible and affordable dwellings enable social connection, greater independence and opportunity for more active lifestyles. Neighbourhoods with a variety of housing types consistently support stronger social networks and higher wellbeing compared with areas dominated by uniform detached housing.[213]

Limited housing choice, housing stress and poor affordability also affect household budgets for essentials such as food, energy and healthcare, with negative impacts on physical and mental health.[214, 215]

Looking forward, one of Australia's most pressing demographic challenges is housing an ageing population. Diverse, accessible and well-located housing will be central to supporting South Australians to live healthy, connected and independent lives, while strengthening social cohesion and overall community wellbeing. Research identifies current issues for older people:

- Housing supply does not align with the needs of older people in Australia, with unmet demand for smaller dwellings, greater diversity in regional areas and better matching of dwelling sizes across tenures.
- There is strong demand for adaptable two- and three-bedroom dwellings in high-amenity, walkable locations and for planning to support smaller housing beyond apartments in established suburbs.
- Many age-specific housing options are constrained by cost, tenure and financial penalties.
- Alternative models such as shared housing, land rent schemes, community land trusts and cooperatives have potential, particularly if benefits are clearly communicated to older people living in Australia.[216]

The SA Government projects that household sizes will continue to decrease, with the current average at 2.4 persons per dwelling.[9] While there has been growth in the delivery of apartments and other forms of diverse housing primarily along major transport corridors and on larger infill sites, there remains an insufficient diversity of dwelling sizes across Greater Adelaide and often a mismatch in terms of occupancy and number of bedrooms. Three-bedroom dwellings continue to dominate the housing market. The availability of smaller two-bedroom dwellings declines significantly with distance from the Adelaide city centre, with only 19%

of dwellings in middle Adelaide and 11% in outer Adelaide providing two-bedroom options.[9]

The Australian Government has delivered incentives to encourage older people to sell their homes, including a mix of superannuation and pension exemptions.[217] The SA Government has also pledged to abolish stamp duty for downsizers aged 60 and over who sell their existing home and purchase a newly built home or apartment. The intent of these initiatives is to reduce the financial burden associated with moving, while freeing up larger homes for younger families, generally within established areas.

While incentivising downsizing is a positive step, a key barrier remains the availability of suitable homes for older residents to move into. In many cases, people are reluctant to leave their existing homes unless appropriate housing options are available close to their established communities, services and social networks. Addressing the supply and diversity of well-located downsizing options will therefore be critical to the success of these policies.

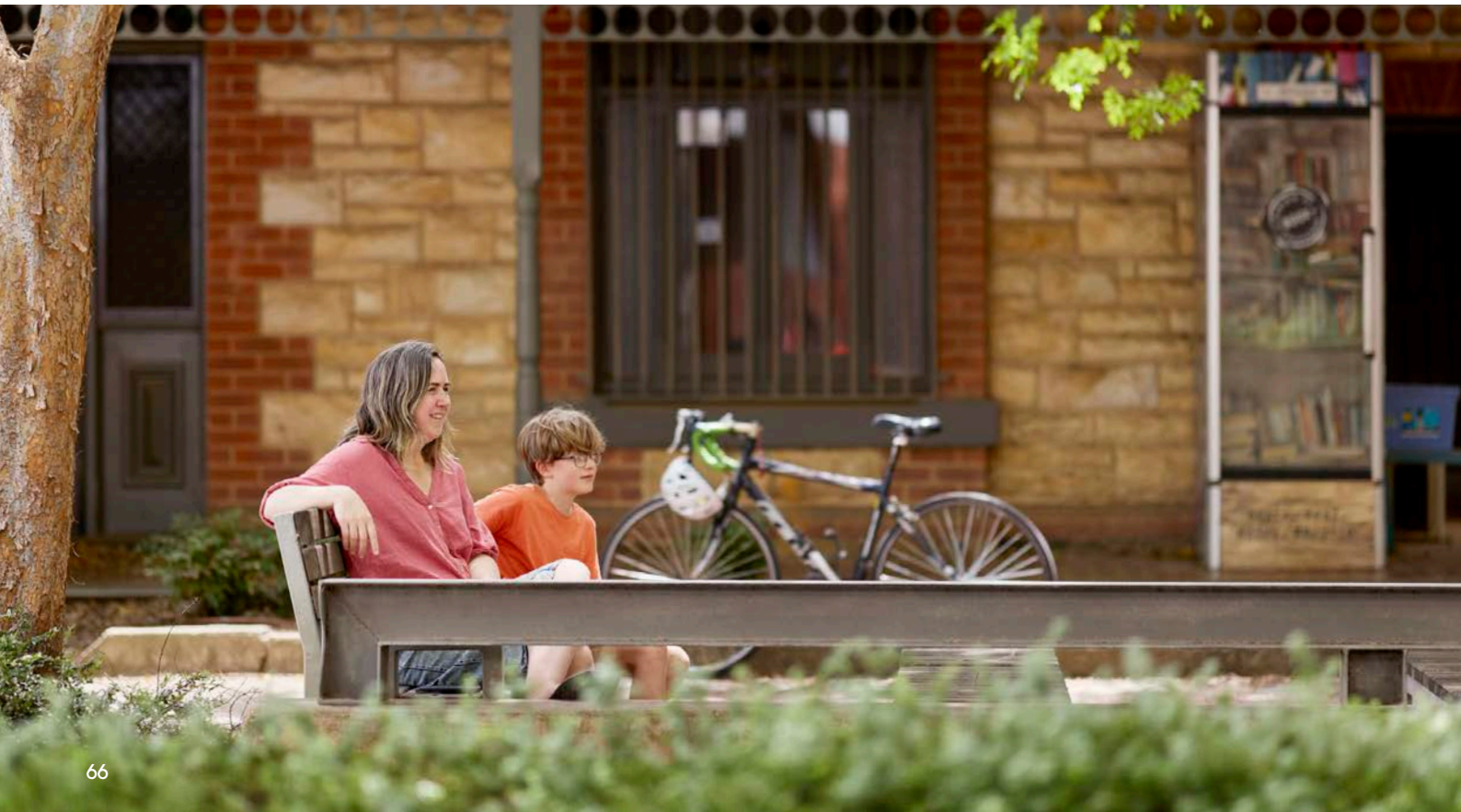
The SA Government recognises that a more diverse housing stock is needed to respond to changing household needs, including an ageing population, the growth of single-person households and increased demand from international students.[10, 217]

This direction aligns closely with the *Greater Adelaide Region Plan's* living locally approach,[9] which depends on achieving sufficient housing density and diversity to support the co-location of homes, jobs and services. By bringing people and daily destinations closer together, living locally seeks to enable most everyday needs to be met within a comfortable walk, ride or public transport trip, while supporting more connected, convenient and climate-smart communities.

The Healthy Active by Design digital toolkit highlights that:[218]

- Diverse housing types support the needs of different household types and life stages.
- Higher residential density supports mixed-use neighbourhoods and increases walking, particularly for transport.
- Higher-density environments are associated with increased physical activity, reduced sedentary behaviour and lower obesity risk.
- Access to parks and public open space supports physical and mental health and encourages walking across all age groups.
- Walkable neighbourhoods with higher density and mixed uses strengthen social connection and community cohesion.
- Well-planned density can reduce car travel, improve air quality and support more affordable housing close to amenities.

Gibson Street, Bowden. Outdoor spaces to relax in comfort are important places to meet people, interact and enjoy public life.
Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.



Key principles

Considerations for housing diversity

Choice: a variety of dwelling types.
Density: supports local living outcomes.
Design: well-designed, adaptable, safe and functional.

Choice: a variety of dwelling types.

- Provide a variety of dwelling types, dwelling and allotment sizes.
- Enable inclusive, mixed-income neighbourhoods.

Providing a range of allotment types and sizes with opportunities to deliver good quality housing (such as detached houses, townhouses, apartments and co-living options) ensures that communities can accommodate diverse household sizes, ages, household incomes and lifestyles. A diverse range of housing options supports ageing in place, reduces social isolation, and strengthens social cohesion that underpins mental health, safety and community resilience. Neighbourhoods with affordable and varied housing options are more likely to sustain social networks and inclusive local identities, helping to reduce health inequalities linked to income segregation.[219, 220]

Increased housing diversity in growth area planning, township expansion and greenfield development better reflects emerging demographic profiles and opportunities for people on different incomes levels to enjoy the same neighbourhoods. Housing distribution should recognise how housing diversity supports social inclusion, enables people to age in place, and allows families, singles, and older adults to remain within the same neighbourhood as their needs change. Areas with varied housing types foster stronger social networks, better access to services and improved wellbeing outcomes.[214, 221, 222]

Density: supports local living outcomes.

- Increase density near services and transport.
- Achieve density to support local services and efficient infrastructure delivery.

The provision of neighbourhood amenities, services, infrastructure and improved walkability can strongly influence resident satisfaction more than the number of dwellings per hectare. Delivering positive higher density outcomes also depends on:

- the building (i.e. its location, construction, design, management and maintenance)
- socio-economic and cultural mix
- quality and amenity of the neighbourhood.[223]

Understanding how a neighbourhood functions is therefore an important baseline in considering what level of density is needed to support delivery and viable maintenance of amenities and services in the longer term.[221, 224]

In Australia, dwelling density is commonly categorised as follows:

- low density: less than 25 dwellings per hectare
- medium density: 25 to 60 dwellings per hectare
- high density: over 60 dwellings per hectare.[225]

Case study: City of Adelaide's Adaptive Reuse City Housing Initiative (ARCHI)

The City of Adelaide launched ARCHI in July 2024 in partnership with the SA Government to help activate vacant and underutilised buildings for new housing. The program offers practical guidance, case studies, financial incentives and dedicated case management support, supported by a program of evidence-based research. The ARCHI incentives scheme supports building owners through dedicated, free case management and targeted financial incentives that assist with approvals and construction costs. To date, ARCHI has funded ten projects delivering 16 dwellings and five adaptive reuse homes.

Adaptive reuse involves remodelling works that can create healthier indoor environments and support improved occupant health. These works can improve thermal comfort, increase access to natural light and enable the use of healthier building materials. Adaptive reuse of buildings in the City of Adelaide also promotes healthy urban living. By situating homes near shops, workplaces, public transport, recreation and green spaces, residents can walk or cycle for daily activities, reducing reliance on cars and supporting active lifestyles.

A minimum threshold of around 35 dwellings per hectare is required to support a full range of local destinations within a walkable catchment that underpins liveable neighbourhoods.[225] This threshold is rarely achieved, particularly in greenfield developments. To break this pattern, future development should deliver sufficient density to enable viable local amenities and public transport services that support healthy, active living. Achieving this outcome relies on enforceable, evidence-based design guidance, adequate and transparent developer contributions, and coordinated long-term strategic planning.[225]

Well-planned, denser neighbourhoods support walking, wheeling and bike riding, improve access to services, and encourage public transport use. Proximity to shops, parks, schools, and community facilities promotes physical activity and equitable access to health-promoting infrastructure.[223]

Planning and design considerations include:

- set a minimum density target (at least 30–35 dwellings per hectare)
- deliver a high-quality public realm
- ensure the recreation and daily life needs of children are addressed
- integrate CPTED principles (see 'Movement networks' section of this guide)
- locate higher-density housing in mixed-use developments, optimally within 800 metres of amenities and services
- maximise public transport accessibility
- ensure safe speed and road design
- design comfortable streets with at least 30% tree cover
- foster relationships between local communities, new and existing residents.[225]

Design: well-designed, adaptable, safe and functional.

- Design and retrofit diverse health-promoting housing while respecting neighbourhood character.
- Support adaptability, comfort and long-term liveability.
- Support housing with safe active streets, public spaces and everyday destinations.

Design determines how well different housing types fit together and function within neighbourhoods over time. Well-designed housing diversity supports everyday living, adapts to changing household needs, and balances density with neighbourhood character, comfort and environmental performance. Decisions about layout, scale and street interface help strengthen social connection, health and long-term resilience.[73]

Case study: Accommodation diversity code amendment

The SA Minister for Planning approved Part 1 of the Accommodation diversity code amendment in 2025.[226] The amendment to the *SA Planning and Design Code* is intended to enhance housing diversity and provide more flexibility for the delivery of apartment style homes and retirement living across the state. This directly supports the delivery of the SA Government Housing Roadmap.

The amendment introduces a new 'co-living' form of accommodation with shared facilities such as kitchens and bathrooms. This is a modern interpretation of a boarding house or multiple living but with associated design and layout guidance through specific policies and a new practice guideline (SA Government documents that provide additional guidance with the interpretation and application of planning and building rules).

The Accommodation diversity code amendment allows for increased building heights up to six storeys for aged care accommodation on larger development sites. This provides an opportunity to facilitate older people to continue living in their communities as their housing needs change. During consultation, community concerns about this aspect of the Amendment focused mainly on the potential impact of 4–6 storey buildings, on-site car parking and permitted commercial floorspace on existing neighbourhood character. In response, the final amendment was divided into two sections to enable more nuanced exploration of how some of the proposed policies should work in character areas, established suburbs and parts of the Adelaide Hills.

Many of the shortcomings in contemporary cities stem from a mismatch between how people live today and how our built environments are designed. While culture, technology and lifestyles have evolved, much of our housing and neighbourhood infrastructure remains rooted in outdated models. This gap means cities are often poorly configured for modern daily life, limiting access to services, reducing transport choices and making it harder for communities to flourish. Adapting planning and design to better match current patterns of living is essential for healthier, more resilient and more liveable neighbourhoods.[227]

New developments that reflect the local streetscape and neighbourhood character help preserve community identity and social cohesion. Sensitive design and quality construction reduces opposition to higher-density or infill development and enhances residents' sense of belonging.[208, 228]

Design considerations include:

- Built form variation in height, massing and articulation supports a mix of dwelling types while maintaining a cohesive streetscape.

Case study: Nightingale Bowden

Nightingale Bowden is a not-for-profit housing project delivering socially, financially and environmentally sustainable homes. The apartment building includes 36 compact dwellings offered through cost-price purchase and affordable rental, demonstrating how high-quality urban infill can be achieved without driving displacement or speculative price increases.

Shared rooftop gardens, a guest house for visitors and secure bicycle parking, together with direct access to nearby cycling routes and rail connections, support active lifestyles and everyday movement for residents.

Through cost-price development, income-linked allocation, resale price caps and ongoing not-for-profit stewardship, Nightingale projects maintain long-term affordability while achieving strong environmental performance and transit-oriented living designed to foster community interaction. These mechanisms illustrate how planning frameworks can support neighbourhood renewal, climate-positive development and social equity, providing a practical model for embedding anti-displacement and health equity objectives within South Australia's planning system.

Nightingale Bowden. Green rooftop provides shared outdoor space for residents while contributing to urban cooling, biodiversity and community interaction. Photo: supplied by LANDSKĀP, photography by Duncan McKenzie.

- Diverse housing must be designed to respond to its surrounding context, balancing increased density with neighbourhood character and well-managed built form.
- Façade diversity and consistency express different dwelling types through materials and detailing, while reinforcing overall neighbourhood character and sense of place.
- Active street and communal interfaces are created through clear entries, windows, and overlooking of streets and shared open spaces to support personal security (eyes on the street) and social interaction.
- Well-designed public, semi-public and private open spaces are integrated into developments to provide flexible, practical shared areas for a range of ages and household types.
- Integrated noise management design features to ensure internal living environments minimise noise intrusion to improve sleep quality and reduce stress for occupants. Poor quality sleep is a risk factor for obesity.
- Universal and adaptable design is incorporated into dwellings, entries and shared areas to support accessibility and changing needs over time.
- Consider maximum car parking requirements (i.e. limits on the number of spaces allowed) for developments in areas of high public transport accessibility over minimum car parking requirements to improve dwelling yields, affordability and to make walking, wheeling and bike riding more appealing.
- Use vehicle and service elements that are visually recessive to ensure buildings, landscape and pedestrian spaces define the streetscape.
- Provide adequate parking facilities for bicycles and other forms of micromobility (e.g. scooters, shared bikes) and support car share programs.
- For larger site carefully position a dwelling on an allotment to allow for potential future infill development to occur.

See 'Movement networks', 'Destinations', 'Sense of place', 'Public open space' and 'Urban food' sections in this guide for other related context.

Retrofit ideas

- Advocate for housing diversity and affordability as core considerations across public health, land use and urban development policy, promoting mixed tenures — including rental, social and affordable housing — in all neighbourhoods to support social inclusion.
- Deliver targets for a mix of housing types and sizes at a neighbourhood, council and regional level matched with infrastructure delivery.
- Establish design guides or frameworks for density, built form, housing types and provision of amenity and services.
- Continue to refine zoning and planning controls that help deliver more housing choice, in particular in suburban or growth areas. This should include continued improvement and applicability for inclusionary zoning to deliver more non-market/affordable housing.
- Support adaptable and flexible design that encourage universal design features and adaptable layouts that can accommodate household changes over time, including ageing in place.
- Ensure new housing is located close to schools, shops, community facilities and public transport to promote living locally and reduce car dependency.
- Identify and prioritise investment in public open space and social infrastructure and address deficiency prior to delivering new housing at higher densities.
- Promote 'gentle density', medium-scale housing such as duplexes, townhouses and small apartments that fit within existing neighbourhoods. This approach makes better use of land and infrastructure, expands housing choice, and supports walkable, socially connected communities while retaining local character.[228]
- Implement and scale integration concepts such as the South Australian co-living housing model currently directed at established neighbourhoods. Innovative planning reforms such as South Australia's Future Living Code Amendment are pioneering new ways to achieve tailored housing diversity through co-located housing. This model enables existing homes to be retained, extended and paired with additional dwellings on the same site while preserving mature trees, gardens and streetscape character.
- Prioritise location-focused diversity near services and transport. Housing diversity delivers the greatest health and wellbeing benefits

when it is integrated with well-serviced built environments. Strategic regional plans should emphasise locating a mix of dwelling types close to jobs, public transport, parks, shops and community services, ensuring all households have access to opportunities for active living, social engagement and essential services. This alignment is vital to reducing travel distances, enhancing everyday physical activity and fostering social cohesion across diverse populations.

Monitoring and evaluation

- Develop statewide measures to track housing diversity outcomes using consistent metrics. Measuring changes in housing diversity over time supports-evidence based planning. Tools such as dwelling type and dwelling structure diversity indicators can help planners assess whether a mix of housing options is being delivered across key residential zones and adjust policies accordingly.[229]
- Develop a statewide system to evaluate liveability and wellbeing impacts. Monitoring should include qualitative and quantitative measures of liveability. Collecting feedback from diverse households ensures policies not only increase supply, but deliver homes that genuinely support healthy living.

Bowden. Bowden demonstrates how inner-urban development can provide diverse housing that supports a range of demographics and household types, close to everyday destinations and public transport.
Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

Sense of place

A strong sense of place is what turns neighbourhoods into places people care about. It is the feeling of belonging that comes from familiar streets, welcoming public spaces, everyday destinations and shared experiences. Neighbourhoods with a strong sense of place invite people to walk, linger and connect, supporting wellbeing, local identity and everyday social life.

A sense of place is grounded in character and identity. It reflects the unique qualities of a neighbourhood — its landscape, history, culture, climate and community life — and how these are expressed through streets, buildings and public spaces. Design that responds to local context, rather than applying generic solutions, helps reinforce

The goal for creating a sense of place in our neighbourhoods:

Celebrate local character and identity through design, shaping places that feel distinctive, welcoming and grounded in their community, while supporting everyday life, walking, connection and wellbeing.

Whitmore Square, Adelaide. A wide footpath, landscaping and well shaded public realm allows for on-street dining and safe movement creating a desirable outdoor environment. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

what makes a place distinctive. Materials, scale, planting, public art and the treatment of streets and spaces can all celebrate local stories and values, creating environments that feel familiar, meaningful and authentic to the people who live there. Places that foster belonging and social connection are also important for health. Stronger social cohesion and neighbourhood attachment are associated with lower stress and improved cardiovascular health outcomes.[230, 231]

Placemaking has shifted from a narrow focus on physical design and end products to a people-centred process shaped by everyday use, social interaction and shared meaning. Places are now understood as living environments continually created and reshaped by the people who use them, rather than solely by professional design decisions.[232] In contrast to conventional placemaking, which has often prioritised large-scale investment and economic uplift at the expense of affordability and local continuity, community-led, process-driven approaches centre local voices, shared ownership and social value, and are increasingly recognised as delivering more inclusive, resilient and locally meaningful outcomes (Table 6). While placemaking without a strong community orientation may lift physical quality and economic value, it may undermine social cohesion (for example, by displacing lower-income residents), local identity and community wellbeing.[232, 233]

Table 6. Comparison of conventional placemaking and placemaking as a people-centred process.

Aspect	Conventional placemaking	Placemaking as a process
Scope of development	Economic feasibility	Social enhancement
Approach	Top-down	Bottom-up and collaborative
Open space	Open space planning is considered after development took place	Open space is prioritised through community values connected to such spaces
Focus on planning	Providing infrastructure and buildings	Providing needs of communities

Source: Akbar and Edelenbos, 2021.[233]

Associated with the concept of place is place attachment, which describes the emotional and psychological bonds people develop with places over time through lived experience, meaning and identity (Figure 5).[232] As places are shaped and reshaped through placemaking, these bonds evolve, influencing how people feel, behave and invest in their communities. This matters because strong place attachment supports wellbeing, social connection,

Hutt Street, Adelaide. The storefront blurs boundary between private and public space, and encourages stay and social interaction. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

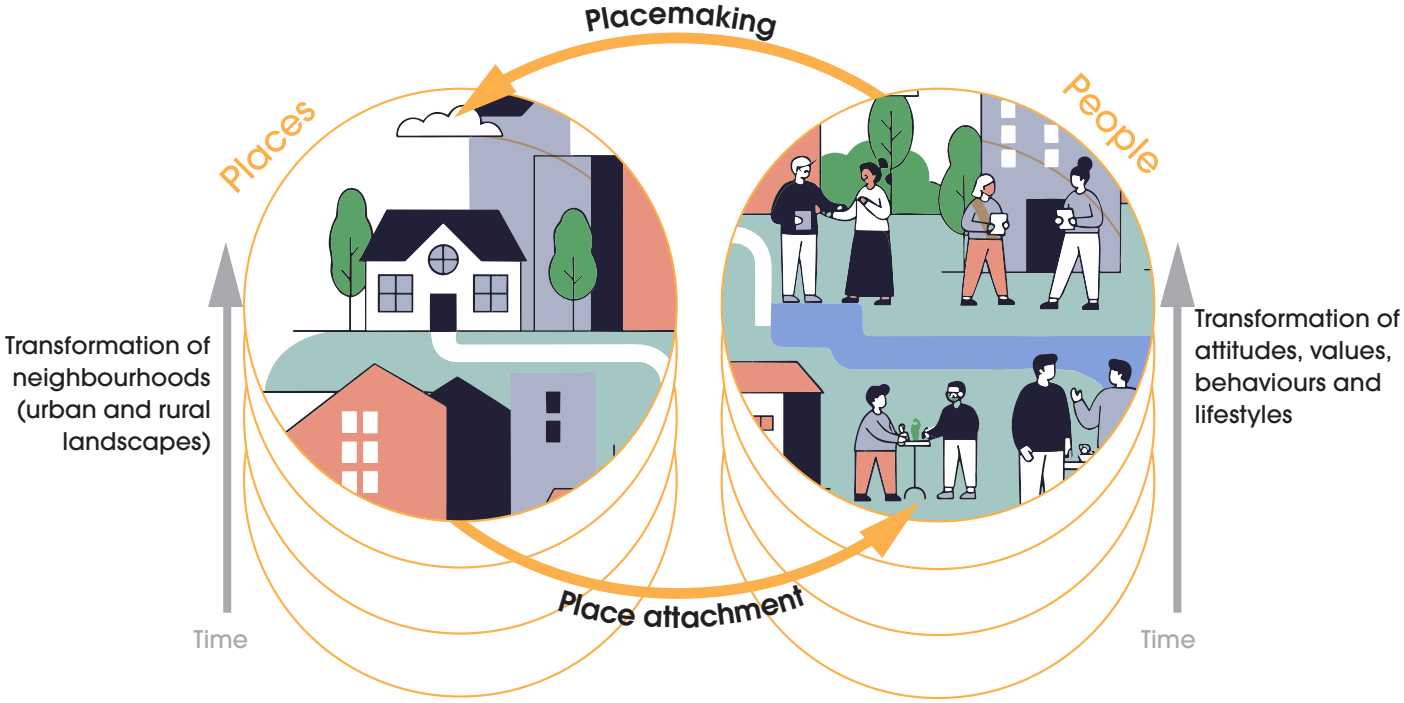


Figure 5. Relationship between people and places, placemaking and place attachment.
Source: adapted from Siatski et al, 2023.[232]

stewardship and long-term care of neighbourhoods, helping create healthier, more resilient and valued places.

Sense of place is strongly valued by the community, with 93 per cent of respondents in the national *What Australia wants: Neighbourhood design* survey rating it as important to their ideal neighbourhood, including 58 per cent as very important — the second-highest priority across the eight outcome areas, after destinations.[75]

The Healthy Active by Design digital toolkit highlights that:[234]

- Local shops, neighbourhood centres and community facilities strengthen social connection and neighbourhood participation.
- Main street centres are associated with stronger sense of community and social activity.
- Multi-use public open spaces encourage chance encounters and community connection.
- Sports and recreation facilities support social interaction and neighbourhood participation.
- Walkable, mixed-use neighbourhoods with connected streets support social interaction and community engagement.
- Walking for transport and recreation is associated with greater happiness, safety and sense of community.

Key principles

Considerations for the sense of place

Character: local heritage, culture and neighbourhood identity.
Comfort to pause and stay.
Community: involvement and stewardship.

Sense of place emerges from the relationship between people, their everyday environments, the local destinations and the identity of the places they share. This section is closely linked to the 'Destinations' section of this guide and should be read alongside it.

Character: local heritage, culture and neighbourhood identity.

- Celebrate local history, stories and cultural identity.
- Protect valued streetscapes, landscapes and landmarks.
- Reflect local materials, art and craftsmanship.
- Reinforce unique neighbourhood character and diversity.
- Honour Indigenous and shared cultural heritage.

Effective placemaking should move beyond repeatable design formulas and respond to the unique layers of character, heritage, culture, landscape, climate and community identity that give neighbourhoods their meaning, richness and long-term value. Otherwise, there are risks of producing uniform places that reflect standardised planning templates rather than local character.[235]

In South Australia, this understanding of place must also recognise the enduring connection of First Nations peoples to Country. First Nations heritage is not only expressed through registered sites or cultural artifacts. It is embedded in landscapes, waterways, travel routes, stories and cultural practices that have shaped Country for tens of thousands of years. Recognising these relationships means acknowledging Traditional Custodians, respecting cultural knowledge, and working with First Nations communities so that planning and design respond to cultural landscapes and living heritage. When First Nations knowledge and connection to Country are recognised in local placemaking, it strengthens cultural continuity and helps create places that reflect deeper histories and shared stewardship.[236, 237]

Heritage is not only found in formally protected buildings, monuments or tourist destinations. Much of what shapes people's connection to place sits within everyday settings: familiar streets, parks,

Case study: Victor Harbor Mainstreet Precinct

The upgrade of the Victor Harbor Mainstreet precinct demonstrates how thoughtful streetscape design can support healthier and more active communities. Guided by the Victor Harbor Mainstreet Precinct Master Plan, the project sought to transform the town centre into a more walkable, accessible and attractive environment for residents and visitors. Improvements to the public realm focused on widening footpaths, improving pedestrian crossings and creating safer, more comfortable places for people to move through and spend time in the street.

A key focus of the upgrade was prioritising people within the town centre. New street trees, landscaping, seating and shaded areas create a more comfortable microclimate and encourage people to pause, meet and spend time outdoors. Importantly, the design responds to the local identity and coastal character of Victor Harbor. Distinctive lighting along Ocean Street, inspired by the rib structure of the southern right whale, provides a strong sense of place while improving safety and visibility at night.

Ocean Street, Victor Harbor. Wide footpaths, public art and a traffic-calmed street create a centre stage for celebrating local heritage and place identity. Photo: supplied by WAX Design, photography by Sweet Lime Photo.

shopfronts, landscapes, public spaces, and patterns of use that have evolved over time. This everyday heritage reflects how people live, move, gather and identify with their neighbourhoods, embedding memory, meaning and local identity into ordinary places.[238] In South Australia, it should also include the visible and less visible expressions of First Nations heritage, including cultural associations with land, water, routes, meeting places and names, and the ongoing presence and authority of Traditional Custodians in shaping how place is understood and cared for.[237, 239]

Everyday heritage is a living part of neighbourhoods, embedded in familiar streets, landscapes, buildings and long-standing patterns of use that shape identity, memory and belonging. Planning and design should protect and adapt these qualities to strengthen local character, continuity and legibility. This should include early and ongoing engagement with Traditional Custodians, respect for cultural knowledge, and placemaking approaches that make First Nations heritage legible in the public realm without reducing it to signage or symbolic gestures alone. This helps ensure that growth builds on what makes places distinctive rather than eroding it.[240, 241]

Heritage, culture and local history also shape how people recognise, experience and connect with place, expressed through stories, creative activity, food, public art, landscapes, building form and everyday social life. Design responses should celebrate this richness by supporting locally meaningful uses, flexible spaces for cultural expression, and outcomes that reflect community identity rather than uniform solutions.

Design responses can translate local character, heritage and culture into visible, everyday experiences within streets, public spaces and buildings. This may include:

- incorporating public art and storytelling that reflect local histories and cultures
- retaining and adapting heritage elements that anchor local identity
- using materials, colours and planting that reference local landscapes
- designing flexible spaces for markets, festivals and community gatherings
- supporting active frontages that showcase local businesses and creative activity
- integrating culturally inclusive amenities, seating and shade for all ages
- celebrating local views, landmarks and natural features in street layouts
- encouraging small-scale, human-centred building forms and fine grain streets. Providing spaces for informal play, performance and everyday social life.

Yitpi Yartapuultiku Aboriginal Cultural Centre. Kaurna culture is embedded into the landscape and architecture of the site, including trails, storylines and local cultural references. Photo: by Bashimage.

Comfort to pause and stay.

- Create welcoming, safe and attractive places.
- Make it comfortable to pause, sit, meet and linger.
- Provide shade, seating, lighting and everyday amenities.
- Support casual activity, play and social connection.
- Foster places people value, care for and return to.

Good placemaking invites people to pause, enjoy and linger, not simply move through space. Aesthetics, comfort and coherence shape how welcoming a place feels, whether it is a street, a small park or a community garden. People respond to places that feel ordered, cared for and fitting to their surroundings, even when the design is modest rather than iconic. These simple qualities create settings people return to, supporting wellbeing, social connection and a stronger sense of belonging.[235]

Shade on a hot day, a place to sit with a coffee, shelter from wind or rain, clear sightlines, and a sense of care and activity all influence whether a street becomes a place to pass through or a place to spend time. These small, practical design details shape how long people stay, who feels included, and how often spaces are used, directly supporting walking, social interaction and wellbeing.

Design and street elements that support everyday comfort and staying include:[29, 242]

- shade and shelter: tree canopy, awnings, pergolas, and weather protection
- comfortable seating: varied seating types, spacing, backs and armrests
- microclimate control: wind buffering, sun access in winter, cooling in summer
- drinking water access: fountains and refill points, for people and their pets
- cleanliness and maintenance: litter management, graffiti control, well-kept surfaces
- good lighting: even, pedestrian-scale lighting for safety and visibility
- passive surveillance: overlooking buildings, active frontages, visible activity
- low traffic stress: slower speeds, buffers, reduced noise and fumes
- accessible paths and surfaces: smooth gradients, tactile cues, generous widths
- wayfinding and legibility: clear sightlines, signage, intuitive layouts
- greenery and planting: trees, gardens, seasonal colour, habitat interest
- human scale design: building height, enclosure, edge definition
- active edges: cafés, shopfronts, community uses facing the street
- informal activity spaces: edges for play, pause, conversation
- public amenities: toilets, bins, bike parking, pram parking
- noise comfort: separation from traffic, acoustic buffering
- sense of identity: local materials, art, cultural cues
- flexible space: room for pop-ups, events, street trading or seating expansion.

JB Ware Reserve, Glen Osmond. Whimsical design transforms a retaining wall into a play element and park feature.
Photo: supplied by WAX Design, photography by Sweet Lime Photo.

Community: involvement and stewardship.

- Involve communities early and continuously in decisions about their local places.
- Enable inclusive participation across ages and cultures.
- Empower community-led initiatives and partnerships.
- Support local leadership.

Community involvement strengthens placemaking because people do not simply use places — they form relationships with them, draw meaning from them, and shape how they function over time. When communities are involved in shaping their streets, parks and public spaces, places are more likely to support belonging, social connection and everyday wellbeing. Strong social networks and shared ownership help sustain active, safe and welcoming neighbourhoods, particularly as areas change or densify.

Participatory planning means involving the people who use a place in shaping decisions about its planning and design. It brings residents, local organisations and other stakeholders into the process early so their knowledge, needs and priorities inform how places are planned, designed and managed. Participatory planning consistently produces better outcomes because local users understand how places really work: where people feel safe, how spaces are used at different times, and what would make them more inviting and inclusive. Involving diverse users early improves design quality, builds trust, reduces conflict and leads to places that are better used, better cared for and more resilient over time. Community participation also strengthens civic capacity and social capital, enabling communities and governments to work together to create healthier, more liveable places.[243]

Investment in creative participation techniques is recommended to strengthen the quality and impact of community involvement in placemaking. Well-facilitated, hands-on activities and simple creative exercises enable people to share lived experience, test ideas and contribute local knowledge that is often missed through standard consultation. These approaches support learning by doing, build trust and ownership, and lead to places that better reflect community needs, support wellbeing and sustain long-term stewardship.[243]

The list below provides practical approaches used in placemaking to support communities to participate meaningfully in shaping local places include, and may be useful particularly in disadvantaged areas:[233, 244, 245]

- Work through trusted local networks: partner with community organisations, schools, cultural groups and local leaders who already have established relationships and credibility in the neighbourhood.
- Remove practical barriers to participation: hold activities locally and provide childcare, translation, food and flexible meeting times so participation is realistic for more residents.
- Invest in local leadership: provide training, mentoring and small grants to support residents as local champions who can lead initiatives and mobilise neighbours.
- Fund small community-led ideas: micro-grants or participatory budgeting allow residents to propose and deliver local improvements that matter to them.
- Use quick, visible projects: temporary street changes, pop-up parks, murals or community planting days help people see immediate change and build confidence in collective action.
- Value local knowledge: treat residents' lived experience as expertise and integrate it into planning and design decisions.
- Create long-term stewardship opportunities: support community groups to care for gardens, public spaces or events so placemaking becomes an ongoing shared responsibility.
- Celebrate culture and identity: local art, storytelling and community events strengthen pride, belonging and connection to place.

Community-led placemaking strengthens local capability, social connection and sense of belonging, while building skills, trust and shared ownership. These social gains translate into stronger local identity, greater participation, improved wellbeing and more resilient communities over time.[233]

Retrofit ideas

- Map, research and record local stories, heritage elements, cultural assets and community activity patterns to inform projects in local neighbourhoods.
- Identify flexible spaces that can accommodate markets, performances, festivals, informal gatherings and spontaneous activity across different seasons and times of day.
- Introduce public art, interpretation and landscape improvements that reflect cultural history, Indigenous knowledge and community values. These can be integrated into existing streets, parks and civic spaces through murals, artist-designed seating, paving patterns, planting, signage and place names that reveal local stories and connections to Country.
- Work with local organisations, schools, cultural groups and community networks to co-design improvements to existing parks, streets and public spaces while building local stewardship
- Align maintenance, programming and funding so upgraded streets, parks and public spaces remain welcoming, safe and well used over time. This may include regular activities, shared stewardship with community groups, and maintenance approaches that support active and cared-for places.
- Small, low-cost upgrades such as additional shade, seating, lighting, planting and refreshed surfaces can improve comfort in existing streets and public spaces, helping people feel more welcome to pause and spend time there.
- Small, low-cost tactical changes such as reallocating road space for pocket parks, parklets, wider footpaths, outdoor seating and safer crossings can transform existing streets into more attractive places.
- Activate underused spaces such as car parks, vacant lots and wide verges through temporary installations, pop-up events, community gardens and trial projects.
- Improve walking, wheeling and bike riding connections to local destinations, parks and community facilities to strengthen everyday movement and social interaction.
- Upgrade and highlight existing heritage features, public art and local landmarks through restoration, lighting, interpretation and small landscape improvements to strengthen visibility, reinforce local identity and build community pride.
- Introduce flexible infrastructure such as movable furniture, shade structures and temporary stages to support varied programming without major capital works.

Henley Square, Henley Beach. A playful water fountain extends the experience of the shoreline into the plaza, while sculpted pebble-like seating, open lawns and beachfront cafés create a relaxed gathering place that reflects the coastal character.
Photo: supplied by TCL, photography by Sam Noonan.

- Improve lighting, visibility and passive surveillance in spaces where safety concerns limit use, applying CPTED principles sensitively.
- Partner with local groups to co-design murals, planting days, cultural events and stewardship activities that build ownership and care.
- Retrofit play, exercise and seating opportunities into existing parks and streets to support all ages and abilities.
- Use tactical urbanism approaches to test changes before permanent investment, allowing communities to shape outcomes through lived experience.

Monitoring and evaluation

Monitoring sense of place focuses on how spaces are used, experienced and valued, alongside how they support health, inclusion and social connection over time. A balanced approach combines quantitative measures with community insight and observation.

Indicator suggestions include:

- Use and activity:
  - frequency and duration of visits to public spaces
  - diversity of activities observed across age groups and times of day
  - participation levels in local events and programs.
- Comfort and amenity:
  - availability and condition of shade, seating, lighting, water and shelter
  - thermal comfort and microclimate performance in warmer months
  - accessibility for people with disability, prams and mobility aids.
- Safety and perception:
  - community perceptions of safety and comfort during day and evening use
  - passive surveillance and visibility audits
  - maintenance standards and response times.
- Social connection and belonging:
  - resident feedback on sense of belonging, pride and attachment to place
  - levels of informal social interaction observed in public spaces
  - participation in community-led activities.
- Cultural expression and identity:
  - visibility of local stories, heritage and cultural representation
  - use of spaces by diverse cultural groups and community organisations
  - presence of locally driven art, soundscapes and other forms of creative interpretation.
- Walkability and access:
  - pedestrian volumes and dwell times in local centres and key spaces
  - proportion of trips made by walking, wheeling, bike riding or public transport
  - proportion of spend in local shops made by walking, wheeling, bike riding or public transport
  - connectivity between public spaces, destinations and facilities.
- Equity:
  - distribution of quality public spaces across neighbourhoods
  - access for vulnerable groups, including older people, children and low-income households.

Healthy food

Urban food systems positively influence public health outcomes. Easy access to affordable, environmentally sustainable, healthy and nutritious food where people live, work and play is critical for improving community wellbeing and heart health.

The local food environment directly shapes dietary choices and health. Research shows that easier access to unhealthy food links to higher body mass index (BMI),[229, 246] while access to supermarkets is associated with higher fruit and vegetable consumption.[247] Food insecurity compounds these challenges — in Australia, one in eight people, including one in six children, cannot afford healthy food.[248, 249] Improving access to healthy food can support better diet quality and reduce cardiovascular risk, as higher consumption of fruit and vegetables is consistently associated with lower rates of cardiovascular disease and premature mortality.[250, 251]

The goal for our urban food systems:

Create accessible, affordable and sustainable food environments that support healthy eating patterns and connect communities through integrated planning and design.

Kitchen Garden, Adelaide Botanic Garden, Adelaide. Community gardens act as living classrooms where children take part in growing, harvesting and preparing food, helping build practical skills and a stronger understanding of healthy eating. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

Food-sensitive planning decisions can facilitate food access, increase local production and reduce waste, creating built environments that actively support public health outcomes through integrated design.[252] South Australia's experiences, such as South Australian Food Network and Edible Adelaide, demonstrate that transforming urban food systems for health requires coordinating community-led initiatives with strategic planning policies.[253]

Strategic planning that takes into account urban food supply chains can help local councils shape food environments that support healthier diets, strengthen community wellbeing, and address broader challenges such as climate change and urban growth.[254, 255, 256]

The Healthy Active by Design digital toolkit highlights that:[257]

- Greater access to healthy food outlets is linked to higher fruit and vegetable intake and better overall diet quality.
- Neighbourhood food environments influence diet and weight outcomes: supermarkets are associated with lower BMI and obesity rates, while areas with more convenience and takeaway outlets — often in lower socio-economic neighbourhoods — tend to have poorer access to healthy food and worse diet quality.
- Breastfeeding is associated with a lower risk of children becoming overweight or obese.
- Well-located community food spaces, such as markets, plazas and gardens, can strengthen social and cultural inclusion.
- Good access to healthy food by public transport, walking and cycling helps reduce barriers for disadvantaged or less mobile residents.
- Farmers' markets are associated with higher fruit and vegetable consumption.
- Community gardens provide opportunities for food education, social connection and local food growing.

A healthy urban food system encompasses the complete network of activities, infrastructure and environments that enable food to move from production to consumption. It includes growing, processing, distributing, accessing, consuming and disposing of food. In planning and design terms, this means creating the physical and regulatory conditions that allow people to easily access nutritious food, grow food locally, learn about, value and support local food businesses, and participate in community food initiatives.[258, 259]

Transforming urban food systems requires coordinated action across multiple scales and sectors. Individual interventions and initiatives can deliver localised benefits through alternative food networks, but systemic change emerges when planning decisions strategically support healthy food access as a core component of liveable, sustainable neighbourhoods.[113]

Key principles

Considerations for healthy food

Retail and access: convenient, affordable and locally accessible.
Production and distribution: resilient and well-connected.
Community awareness: education, connection and food literacy.
Sustainability: waste reduction and circular food systems.

Retail and access: convenient, affordable and locally accessible.

- Locate fresh food outlets within walking distance of homes and connect to safe walking, wheeling and bike riding routes.
- Prioritise supermarkets, greengrocers and fresh food markets.
- Enable diverse local food businesses in mixed-use areas.
- Adopt healthy food standards in venues.

The food environment, the availability, accessibility, affordability and promotion of food, fundamentally shapes what people eat. When people have convenient access to affordable, nutritious food in their neighbourhoods, they are more likely to make healthy choices.[247, 260]

A study undertaken in Melbourne found that unhealthy food outlets, including fast-food restaurants and convenience stores, have grown much faster than supermarkets and fruit and vegetable shops, reaching ratios of up to 9:1.[261] In many neighbourhoods, less healthy foods are therefore far more accessible than fresh produce. Planning policies that increase access to healthy food outlets can help make healthier choices easier for everyone.[262]

Current policy frameworks, including living locally and 20-minute neighbourhood approaches, seek to ensure people can access essential services such as food outlets within a comfortable walking distance.[263]

Movement networks shape eating patterns by influencing how easily people can reach food. Safe walking, wheeling and bike riding routes, public transport connections and last-mile delivery infrastructure improve access to fresh food, particularly for those without private vehicles.[247, 260, 264, 265] This promotes equitable food access and supports sustainable urban mobility. Evidence suggests that food retail should be located within 400–800 metres of where people live, a distance most people find comfortable to walk regularly.[164, 264, 265]

However, most Australian cities, including Adelaide, face a gap between liveability goals and reality. Online liveability index data from the Australian Urban Observatory shows that residents in inner local government areas near the City of Adelaide live on average one kilometre from supermarkets or greengrocers. In outer areas such as Light, Adelaide Plains, Adelaide Hills and Mount Barker, average distances exceed three kilometres.[266]

Food purchasing behaviour and diet is influenced by availability and accessibility to healthy, affordable, culturally-appropriate food in the built environment relative to the exposure to unhealthy food and drink options.[267]

Proximity to fast food outlets and convenience stores has been found to negatively impact food choices — particularly in the case of children and schools.[268] Research suggests that exposure to fast food outlets is also linked with increased weight.[269, 270] High-quality drinking water, and a variety of places to grow fresh produce and to prepare and share meals supports healthier diets.

Planning decisions that support fresh food outlets within walking distance of homes can reduce reliance on cars and improve access to healthy food. Locating food shops near public transport stops and stations further extends access, particularly for people without private vehicles. Allowing food retail, cafés and small-scale food production alongside housing and workplaces helps create more active, self-sufficient neighbourhoods.[256, 271] A diverse mix of food uses increases choice and also contributes to lively, inclusive local centres.

Local governments can support local food businesses through flexible zoning that allows food retail, farmers' markets, cafes, and small-scale food production in residential and employment areas, whilst creating conditions for supermarkets, fresh food markets, independent grocers and specialty food stores to coexist.

Kitchen Garden, Adelaide Botanic Garden, Adelaide. Harvesting the crop. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

Food choices at recreation venues and leisure events also shape everyday eating habits. In Adelaide, major concert venues and many sporting grounds still offer menus dominated by fast food and sugary drinks, limiting healthier options for families and young people. Local governments can lead by example by adopting healthy food and drink standards across their own facilities, ensuring that swimming pool kiosks, recreation centres and community venues provide appealing, affordable options such as fresh fruit and healthier snacks. Making healthy food the easy choice in places where people gather for sport, recreation and events can help reinforce positive eating habits and support better long-term health.

Production and distribution: resilient and well-connected.

- Integrate community gardens into residential neighbourhoods and enable private space for food growing.
- Incorporate edible landscapes in streets, parks and public spaces.
- Strengthen links between urban consumers and local and peri-urban producers.
- Protect freight routes connecting agricultural regions to the city.
- Support local food hubs and distribution centres.

Creating cities where food production is integrated into the urban landscape requires coordinated action across planning policy, urban design and community development.

Well-located and well-designed urban agriculture can deliver health benefits across whole communities, making productive landscapes an important part of healthy urban planning.[272] Cities can transform underused spaces into productive landscapes that serve both aesthetic and functional purposes. Streets, verges, parks and reserves offer opportunities for fruit and nut trees, herb gardens and community orchards that provide food while enhancing built environments.[273] With thoughtful design, productive landscapes require no more upkeep than ornamental plantings while also producing edible food.[272]

Converting underutilised public land to productive use requires site assessment before implementation. Historical pollutants may be present in urban soils, particularly on former industrial sites, petrol stations, or land with legacy contamination.[273, 274] Ongoing pollution from heavy traffic along arterial roads or nearby industrial operations can also contaminate food crops through soil deposition and atmospheric pollution. Before establishing food growing spaces, soil testing is advisable.

Risk mitigation strategies for contaminated or potentially contaminated sites include:

- using raised garden beds with clean imported soil and physical barriers preventing root contact with contaminated ground
- implementing sealed pathways and borders containing clean growing media
- selecting food crops with lower contamination uptake such as fruiting vegetables rather than leafy greens or root vegetables
- establishing buffer zones between food growing areas and pollution sources like major roads
- installing physical barriers such as hedges or fencing to reduce atmospheric deposition.

Where contamination levels exceed safe thresholds even with mitigation, sites may be more suitable for non-edible landscaping or community uses other than food production.

As cities densify, ensuring access to food growing spaces becomes increasingly important. New residential developments, especially medium and high density, should strategically include urban agriculture elements, such as community garden spaces, through planning requirements or incentive programs.[275] These spaces require strong support to succeed, including stable funding, effective governance and leadership, and access to essential infrastructure. Reliable water, sufficient sunlight,

Park Terrace Community Garden, Adelaide Park Lands. A community garden provides a shared space where residents can grow fresh food, engage in physical activity and connect with neighbours. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

secure long-term tenure, and appropriate storage and waste facilities are all critical to sustaining productive urban gardens.[276]

Residential developments should include private outdoor spaces designed for food cultivation. Thoughtful orientation for sunlight, adequate soil depth, and easy water access should allow residents to grow food at home, supporting household food security and fostering a personal connection to healthy local food production.[272]

Beyond consumer access, local governments can strengthen sustainable food systems by supporting networks that connect urban consumers with peri-urban producers, protecting key freight routes, and enabling food hubs or distribution centres in suitable industrial zones. Shorter local supply chains reduce transport distances and environmental impacts, while incorporating cold chain infrastructure for farmers' markets and community food enterprises helps maintain food safety and minimise waste.[256, 264]

The infrastructure that moves food through cities directly shapes access and sustainability. Efficient movement networks and strategic planning for food distribution can shorten supply chains, reduce environmental impacts, and strengthen links between urban communities and regional producers.[264]

Community awareness: education, connection and food literacy.

- Support alternative local food networks.
- Create opportunities for food education and knowledge sharing.

Healthy urban food systems require engaged communities with the knowledge and capacity to make nutritious choices. When people participate in food growing, preparation, and sharing through community gardens, farmers' markets or food cooperatives, they build food literacy, develop practical skills, and strengthen social connections across generations and cultures.[249]

Alternative food networks (AFNs) are community-led approaches that improve access to healthy food, support fairer conditions for farmers, reduce food waste, and strengthen links between urban and rural areas. They include initiatives such as food hubs, community gardens, food cooperatives, farmers' markets and buyers groups. Buyers groups can be particularly effective in making healthy food more affordable for low-income households by purchasing directly from farmers at wholesale prices.[249]

Local government can support AFNs by providing secure, affordable land; streamlining approvals for community food initiatives; supplying essential infrastructure such as water, power, and storage; and connecting AFNs with institutional purchasers.[272, 275]

Case study: The SA Urban Food Network

The SA Urban Food Network emerged from the 2016 Edible Adelaide gathering, when over 160 stakeholders from across sectors came together to shape a shared vision for South Australia's urban food future.[253] The vision emphasises integrated city-wide food systems, locally accessible land for growing food, affordable local produce, and communities aware of how food systems affect their health, environment and wellbeing.

Addressing key barriers through collaboration:

- Land access: the network links growers to urban spaces and supports projects such as Wagtail Urban Farm in Mitchell Park — an intensive market garden on half a house-block that offered community education and open-gate access.
- Financial innovation: micro-grants (up to $1,000) are distributed to community food initiatives, and social enterprises like Foodprint Experience café showcase viable models where local produce is sourced and earned income supports vulnerable job-seekers.
- Community engagement and capacity building: volunteer 'connectors', such as Fruit Share SA, link growers, local government, planners and the community across South Australia, ensuring resources, information and networks are available statewide.

By aligning land access, funding, and community capacity, the SA Urban Food Network offers a model for how collaboration can advance local food-systems planning. Integrating food systems into urban policy supports food access, environmental resilience, community connection, and local economic diversity.

AFNs, especially community gardens, also promote social connection, knowledge sharing, and physical activity.[249] Local governments can maximise these benefits by supporting food-growing initiatives alongside integrated education programs that foster inclusive, intergenerational and multicultural engagement.

Education initiatives integrated with urban food systems should span diverse settings, including schools, childcare centres, community centres, multicultural organisations, aged care facilities and other community groups, and encourage collaborative projects creating benefits that last a lifetime and contribute to healthier and more connected communities.[277, 278, 279]

Local governments can support food education through strategic planning and direct investment.[280] This can include offering regulatory guidance and grant funding for community food initiatives, and incorporating facilities at the design stage such as community kitchens with commercial-grade equipment, covered workshop spaces, secure garden tool storage and accessible meeting rooms for food cooperatives. Councils can also foster partnerships between schools, community organisations, and AFNs to deliver coordinated programs, provide library or community centre spaces for food literacy classes, and support mobile initiatives like cooking vans or portable gardens to reach diverse neighbourhoods.[113, 281, 282]

Sustainability: waste reduction and circular food systems.

- Protect peri-urban agricultural land.
- Reduce food waste.
- Mitigate heat island effect.

Adelaide Central Market, Adelaide. A diverse range of fresh produce and specialty foods, often unavailable in local supermarkets. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

Urban food systems intersect with environmental sustainability in three critical ways: protecting productive agricultural land, reducing resource load and waste through circular systems, and mitigating urban heat through food-producing landscapes. As Australian cities face pressures from climate change and urban growth, planning decisions that integrate food production with environmental objectives deliver multiple benefits, cooling built environments, diverting organic waste and securing the peri-urban agricultural lands essential for long-term food security.

Preventing urban sprawl from displacing productive farming through policy and strategic planning decisions ensures the long-term food security and economic viability of the region.[283]

Case study: Enabling resilient food systems project

The enabling resilient food systems in South Australia project, led by the Local Government Association (LGA) in partnership with six councils, Green Adelaide, and the Heart Foundation, developed a practical toolbox and collaborative policy framework to strengthen local food resilience.[281] The initiative aimed to strengthen local food resilience by linking food, climate, and health priorities across council activities.

The project raised awareness of the connections between food, wellbeing, and sustainability, produced shared resource toolkits, and fostered strong cross-council collaboration. Councils applied these principles through practical initiatives. For example, Onkaparinga's pop-up social supermarkets improving food access, Mount Barker's producer-in-residence market program supporting local enterprise, and Alexandrina's wicking-bed initiative providing fresh food for families in temporary accommodation.

Adelaide's surrounding fertile agricultural lands are an invaluable resource that must be protected through strategic land use planning. These peri-urban areas provide fresh, locally grown food and preserve key distribution routes connecting regional producers with urban consumers. Planning decisions should prevent urban encroachment on these productive landscapes.[283, 284]

Urban food production reduces waste while improving health and sustainability. Local growing means fresher produce with longer shelf life, reducing spoilage.[285] Community gardens can create closed-loop systems where food scraps become compost, diverting organic waste from landfills and reducing methane emissions. This hands-on connection to food cycles promotes mindful consumption and better dietary choices.[249, 285, 286]

Local governments can establish urban composting programs integrated with community gardens, incorporate food waste processing facilities within urban agriculture precincts to create circular economy models, provide regulatory support to urban community garden initiatives to ensure safety, and require composting infrastructure in new residential and mixed-use developments.

Case study: Adelaide Central Market

The Adelaide Central Market plays a key role in improving access to fresh, healthy food in the city. Its central CBD location, nearby tram stop, free City bus connections and short-stay parking make it easy for residents and visitors to reach a wide range of fresh produce and culturally diverse foods.

The market also contributes to a more sustainable and inclusive food system. Through a long-standing partnership with OzHarvest, surplus food from traders has been redistributed since 2012, rescuing the equivalent of more than 260,000 meals and helping provide fresh, nutritious food to people in need. Education programs and school visits further connect children with fresh produce and build understanding of healthy eating, food culture and sustainability.

The market demonstrates how accessible fresh food destinations can support healthier diets while strengthening social life, cultural exchange and everyday activity in the city. A planned expansion of the market precinct will further increase its capacity as a central hub for fresh food, local businesses and community life.

Adelaide Central Market, Adelaide. The market offers fresh produce that supports healthier eating while bringing people together through the shared experience of food. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

Wherever possible, WSUD systems should be integrated with opportunities for urban food growing. When designed thoughtfully, features such as retention basins, swales, and other stormwater management elements can accommodate edible plantings, creating multifunctional landscapes that manage water while producing food.[287] In Adelaide's hot, dry climate, where summer heat and water scarcity are growing challenges, these systems can also help capture and reuse stormwater to support productive planting and urban cooling. This approach maximises the use of urban land and delivers multiple co-benefits, improving water quality, supporting urban cooling, enhancing biodiversity and strengthening community connection to place.

Hot environments and heatwaves cause significant morbidity.[288] Urban areas are prone to heat retaining, known as a heat island effect, further exacerbating the effects of hot weather.[289] Urban food production directly combats heat island effects through cooling vegetation. Food-growing spaces from rooftop and community gardens, to street orchards, provide shade and evapotranspiration, reducing temperatures and heat-related illness among vulnerable populations.[289, 290, 291] Local planning and design can prioritise edible species in street tree programs, especially in heat-vulnerable neighbourhoods, incentivise green roofs and walls for food production through grants or rate reductions, and require minimum productive green cover ratios in new developments within heat island zones.

Fresh fruit and vegetable shop, Goodwood Road, Goodwood. Local produce stores make healthy food easy to access while adding everyday activity and neighbourhood character to the street. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

Retrofit ideas

- Identify and advocate for the removal of planning barriers to healthy food access.
- Enable food retail, markets and small-scale food production in mixed-use areas.
- Embed urban food systems in planning policies and development guidelines.
- Integrate edible landscapes into streets, parks and capital works programs.
- Support supermarkets, greengrocers and fresh food markets in neighbourhood centres.
- Enable farmers' markets and local buying groups in accessible locations.
- Allow pop-up markets and mobile fresh food vendors in underserved areas.
- Improve walking, cycling and public transport access to food shops.
- Provide bicycle parking and safe pedestrian links to food retail.
- Activate underused council land for community gardens and food growing.
- Provide long-term tenure for established community gardens.
- Improve water supply, storage and basic infrastructure at food growing sites.
- Plant fruit and nut trees in suitable streets and parks.
- Incorporate food growing spaces in new and established residential areas.
- Support community food projects through small grants and basic infrastructure.
- Partner with schools, health services and community organisations on food education.
- Connect community food groups to share knowledge and resources.
- Support training and capacity building for community food organisations.
- Establish productive gardens at council facilities and civic buildings.
- Source local, healthy food for council venues and events.
- Adopt healthy food and drink standards in council facilities and community venues.

Monitoring and evaluation

Food retail and access:

- Calculate the percentage of residents within 400–800 metres walking distance of fresh food outlets.
- Track the ratio of healthy to unhealthy food outlets and public transport connectivity to food retail.
- Assess perceived ease of accessing affordable, healthy food using community surveys.
- Conduct food outlet assessments evaluate availability, quality, and price of healthy foods.

Urban food production:

- Measure total area of productive urban agriculture including community gardens, edible streetscapes, and private food growing spaces.[272]
- Track number of active community gardens, participants, and waitlist data revealing unmet demand.[276]
- Document production yields where possible and collect qualitative feedback capturing social connection and mental health benefits.[249, 275]

Community participation and education indicators:

- Track participation numbers in food education programs across diverse settings.
- Use pre- and post-program surveys assessing improvements in food literacy and cooking confidence.
- Monitor the number, membership, and transaction volumes of AFNs including food cooperatives and buying groups.
- Collect participant testimonials capturing community-building impacts.

Distribution and infrastructure indicators:

- Measure length of safe walking, wheeling and bike riding routes to food outlets and bicycle parking capacity at major retail sites.
- Track food hubs and distribution centres serving AFNs.
- Monitor freight route protections in planning schemes and cold chain infrastructure availability for community food enterprises.

Environmental sustainability indicators:

- Monitor area of peri-urban agricultural land protected from development through planning controls.
- Track urban canopy cover of edible plantings and organic waste diverted through composting programs.
- Measure temperature changes in heat-vulnerable neighbourhoods with food production interventions.

Health and wellbeing indicators:

- Compare population dietary intake data and body mass index trends against food access improvements.
- Monitor food insecurity rates through population surveys to assess whether vulnerable residents experience improved access.
- Track mental health and social connection indicators reflecting benefits of community food initiatives.

Note: Long-term population health outcomes require careful analysis. Partnerships with research institutions will ensure appropriate health data is evaluated with rigorous methodology.

Park Terrace Community Garden, Adelaide Park Lands. A peaceful place to connect with the land. Photo: Supplied by the Heart Foundation, photography by Sweet Lime Photo.

References

1. Heart Foundation. Healthy Active by Design. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au
2. United Nations. The 17 goals. n.d. Accessed 7 April 2026. sdgs.un.org/goals
3. Government of South Australia. *South Australian Economic Statement.* 2023. Accessed 7 April 2026. www.premier.sa.gov.au/south-australian-economic-statement
4. Infrastructure SA. *South Australia's 20-Year State Infrastructure Strategy 2025.* 2025. Accessed 7 April 2026. www.infrastructure.sa.gov.au/20-year-strategy/2025-Strategy
5. Department for Infrastructure and Transport. *South Australia's Transport Strategy.* 2025. Accessed 7 April 2026. dit.sa.gov.au/about-us/strategies-plans/transport-strategy
6. Government of South Australia. State Public Health Plan. 2025. Accessed 7 April 2026. www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/about+us/legislation/public+health+act/state+public+health+plan/state+public+health+plan
7. Government of South Australia. *Urban Greening Strategy for Metropolitan Adelaide.* 2025. Accessed 7 April 2026. cdn.environment.sa.gov.au/greenadelaide/images/1076678-GA-Urban-Greening-Strategy-2025-V20-WEB.pdf
8. Preventive Health SA. Health in All Policies (HiAP). n.d. Accessed 7 April 2026. www.preventivehealth.sa.gov.au/our-agency/other-prevention-work/partnerships/health-in-all-policies-hiap
9. Government of South Australia. *Greater Adelaide Regional Plan.* 2025. Accessed 7 April 2026. plan.sa.gov.au/resources/planning/regional_plans/greater-adelaide-regional-plan
10. Government of South Australia. *More homes for South Australians, Housing roadmap.* 2024. Accessed 7 April 2026. www.dhud.sa.gov.au/__data/assets/pdf_file/0006/1385412/HousingRoadmap-June-2024.pdf
11. Renewal SA. Strategic Plan 2023–2026. 2023. Accessed 7 April 2026. renewalsa.sa.gov.au/assets/volumes/downloads/Strategic-plan/Renewal-SA-Strategic-Plan-2023-2026.pdf
12. Government of South Australia. *Healthy Parks Healthy People South Australia 2021–2026.* 2021. Accessed 7 April 2026. cdn.environment.sa.gov.au/environment/docs/healthy_parks_healthy_people_2021_aprl.pdf
13. Government of South Australia. *Preventive Health Act 2024.* 2024. Accessed 7 April 2026. www.preventivehealth.sa.gov.au/about/preventive-health-sa-act-2024
14. Government of South Australia. *South Australian Public Health Act 2011.* 2011. Accessed 7 April 2026. www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/about+us/legislation/public+health+act/public+health+act
15. Government of South Australia. *Planning, Development and Infrastructure Act 2016.* 2016. Accessed 7 April 2026. www.legislation.sa.gov.au/__legislation-documents/lz/c/a/planning-development-and-infrastructure-act-2016/current/2016.14.auth.pdf
16. PlanSA. State planning policies. n.d. Accessed 7 April 2026. plan.sa.gov.au/resources/planning/state_planning_policies
17. Blake M, Symons J, Bromberg M, Conti W. *An overview of the legal regulatory framework governing local planning in Western Australia: how is community health protected?* 2021. Accessed 7 April 2026. www.cancerwa.asn.au/assets/public/2022/07/UWA-2021-Overview-of-the-legal-regulatory-framework-WA-FINAL-REPORT.pdf
18. Boujenko N, Hardman C, Alvaro J. *South Australia's Active Travel Design Guide.* Government of South Australia. 2024. Accessed 7 April 2026. www.dit.sa.gov.au/__data/assets/pdf_file/0004/1406407/241127-Active-Travel-Design-Guide-web.pdf
19. Tobin M, Hajna S, Orychock K, et al. Rethinking walkability and developing a conceptual definition of active living environments to guide research and practice. *BMC public health.* 2022;22(1). doi:10.1186/s12889-022-12747-3
20. Heart Foundation. Community walkability. n.d. Accessed 7 April 2026. www.healthyactivebydesign. com.au/community-walkability
21. Arup. *Cities alive: towards a walking world.* 2016. Accessed 7 April 2026. www.arup.com/globalassets/downloads/insights/cities-alive-towards-a-walking-world.pdf

22. Tolley R. *Good for business: The health and economic benefits of making town centres and main streets more walkable.* Heart Foundation. 2025. Accessed 7 April 2026. www.healthyactivebydesign.com.au/resources/publications_and_policies

23. Frank LD, Sallis J, Conway TL, et al. Many pathways from land use to health: associations between neighborhood walkability and active transportation, body mass index, and air quality. *Journal of the American Planning Association.* 2006;72(1):75–87. doi:10.1080/01944360608976725

24. Fonseca F, Ribeiro PJG, Conticelli E, et al. Built environment attributes and their influence on walkability. *International Journal of Sustainable Transportation.* 2022;16(7):660–679. doi:10.1080/15568318.2021.1914793

25. Arias-Molinares D, Geurs K, Grigolon A, et al. Exploring the 15-minute city concept for the urban outskirts: a systematic literature review. *European Transport Research Review.* 2025;17:50. doi:10.1186/s12544-025-00743-8

26. Giuffrida N, Mölter A, Pilla F, Carroll P, Ottomanelli M. On the equity of the x-minute city from the perspective of walkability. *Transportation Engineering.* 2024;16:100244. doi:10.1016/j.treng.2024.100244

27. Shields R, da Silva EJG, e Lima TL, Osorio N. Walkability: a review of trends. *Journal of Urbanism.* 2021;16(1):19–41. doi:10.1080/17549175.2021.1936601

28. Healthy Streets. Tools and resources. 2025. Accessed 7 April 2026. www.healthystreets.com/resources#on-street-assessment

29. Gehl J. *Cities for people.* Island Press;2010.

30. Gehl J, Gemzøe L. *Public spaces, public life, Copenhagen.* School Of Architecture Publishers;2004.

31. Heart Foundation. Community walkability checklist. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/community-walkability/checklist

32. Australian Institute of Health and Welfare. Social determinants of health. 2024. Accessed 7 April 2026. www.aihw.gov.au/reports/australias-health/social-determinants-of-health

33. Giles-Corti B, Hooper P, Foster S, Koohsari MJ, Francis J. *Low density development: impacts on physical activity and associated health outcomes: evidence review.* 2014. doi:10.13140/2.1.1097.6004

34. Australian Bureau of Statistics. National health survey: state and territory findings. 2022. Accessed 7 April 2026. www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey-state-and-territory-findings/latest-release#cite-window

35. Health Policy Centre. *South Australian population data analysis and modelling for preventive health.* South Australian Health and Medical Research Institute. 2024. Accessed 7 April 2026. www.preventivehealth.sa.gov.au/assets/downloads/South-Australian-Population-Data-Analysis-and-Modelling-for-Preventive-Health.pdf

36. Department of Health. *The National Obesity Strategy 2022–2032.* 2022. Accessed 7 April 2026. www.health.gov.au/resources/publications/national-obesity-strategy-2022-2032

37. Needham C, Strugnell C, Allender S, Orellana L. Beyond food swamps and food deserts: exploring urban Australian food retail environment typologies. *Public health nutrition.* 2022;25(5):1140–52. doi:10.1017/S136898002200009X

38. Preventive Health SA. *South Australian population health survey, 2024 Annual report, Adults.* 2024.

39. Preventive Health SA. *South Australian population health survey, 2024 Annual report, Children.* 2024.

40. Preventive Health SA. *Childhood overweight and obesity in South Australia.* 2025.

41. World Health Organization. *The world health report: 2002.* 2002. Accessed 7 April 2026. www.who.int/publications/i/item/9241562072

42. VicHealth. *Victorian Health Promotion Foundation (VicHealth) submission on a new plan for Victoria.* 2024. Accessed 7 April 2026. www.vichealth.vic.gov.au/sites/default/files/2025-05/VicHealth%20submission%20on%20the%20Plan%20for%20Victoria_0.pdf

43. Kent JL, Thompson S. The three domains of urban planning for health and well-being. Journal of planning literature. 2014;29(3):239–256. doi:0.1177/0885412214520712

44. WHO Regional Office for Europe. *Urban design for health: inspiration for the use of urban design to promote physical activity and healthy diets in the WHO European Region.* 2022. Accessed 7 April 2026. www.who.int/europe/publications/i/item/WHO-EURO-2022-5961-45726-65769

45. World Health Organization. Obesity and overweight. 2025. Accessed 7 April 2026. www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

46. Anderson E, Shivakumar, G. Effects of exercise and physical activity on anxiety. *Frontiers in psychiatry.* 2013;4:27. doi:10.3389/fpsyt.2013.00027

47. Nash L, Wippel C, Whiting S, Breda J. *Physical activity.* WHO Regional Office for Europe;2019. Accessed 7 April 2026. iris.who.int/server/api/core/bitstreams/c6c5ddb2-4bce-4c68-956d-bbe821bc70fb/content

48. Australian Institute of Health and Welfare. *Physical activity across the life stages.* 2018. Accessed 7 April 2026. www.aihw.gov.au/getmedia/c249ef97-e219-44df-a8bd-f5e50d04064c/aihw-phe-225.pdf?v=20230605183706&

49. Drewnowski A, Vermeylen F, Aggarwal A, Seguin R. Consumption frequency of foods away from home linked with higher body mass index and lower fruit and vegetable intake among adults: a cross-sectional study. *Journal of environmental and public health.* 2016;2016(2016):89–100. doi:10.1155/2016/3074241

50. World Health Organization. From loneliness to social connection — charting a path to healthier societies. 2025. Accessed 7 April 2026.

51. Blake M. *Connections matter: a report on the impacts of loneliness in Australia.* Groundswell Foundation;2022. Accessed 7 April 2026. www.groundswellfoundation.com.au/post/connectionsmatter-a-report-on-the-impacts-of-loneliness-in-australia

52. Feng X, Astell-Burt T. Lonelygenic environments: a call for research on multilevel determinants of loneliness. *The Lancet planetary health.* 2022;6(12):e933-e934. doi:10.1016/S2542-5196(22)00306-0

53. Kent J, Thompson S. Planning Australia's healthy built environments. *Journal of urban affairs.* 2021;43(8):1205–7. doi:10.1080/07352166.2021.1906011

54. Australian Institute of Health and Welfare. *Health system spending on disease and injury in Australia, 2023–24*. 2025. Accessed 7 April 2026. www.aihw.gov.au/reports/health-welfare-expenditure/health-system-spending-disease-injury-aus-2023-24/contents/spending-on-disease-by-abod-groups

55. Australian Institute of Health and Welfare. Economics of sport and physical activity participation and injury. 2023. Accessed 7 April 2026. www.aihw.gov.au/reports/sports-injury/economics-of-sport-and-physical-activity/contents/summary

56. Eckermann S, Willan AR. Active Lives South Australia health economic analysis: an evidence base for the potential of health promotion strategies supporting physical activity guidelines to reduce public health costs while improving wellbeing. *Journal of public health.* 2022;30(7):1791–807. doi:10.1007/s10389-021-01649-0

57. NSW Government. NSW active transport health model. n.d. Accessed 7 April 2026. www.health.nsw.gov.au/awards/2025/Pages/active-transport-model.aspx

58. Infrastructure Australia. *Urban transport crowding and congestion, the Australian infrastructure audit 2019, supplementary report.* 2019. Accessed 7 April 2026. www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Urban%20Transport%20Crowding%20and%20Congestion.pdf

59. Bureau of Transport and Regional Economics. *Estimating urban traffic and congestion cost trends for Australian cities, Working paper 71.* 2007. Accessed 7 April 2026. www.bitre.gov.au/sites/default/files/wp_071.pdf

60. PlanSA. Population projections. 2021. Accessed 7 April 2026. plan.sa.gov.au/state_snapshot/population/population-projections

61. SA Health. *South Australia's Plan for Ageing Well 2020-2025.* 2020. Accessed 7 April 2026. dhs.sa.gov.au/__data/assets/pdf_file/0006/179808/South-Australias-Plan-for-Ageing-Well-2020-2025.pdf

62. Heart Foundation. Healthy active ageing. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/healthy-active-ageing/active-ageing

63. Astell-Burt T, Feng X. Urban green space, tree canopy and prevention of cardiometabolic diseases: a multilevel longitudinal study of 46 786 Australians. *International journal of epidemiology.* 2020;49(3):926–33. doi:10.1093/ije/dyz239

64. van den Bosch M, Ode Sang Å. Urban natural environments as nature-based solutions for improved public health, a systematic review of reviews. *Environmental research.* 2017;158:373–384. doi:10.1016/j.envres.2017.05.040

65. Feng X, Navakatikyan MA, Toms R, Astell-Burt T. Leafier communities, healthier hearts: an Australian cohort study of 104,725 adults tracking cardiovascular events and mortality across 10 years of linked health data. *Heart, lung and circulation.* 2023;32(1):105–13. doi:10.1016/j.hlc.2022.10.018

66. Feng X, Navakatikyan M, Eckermann S, Astell-Burt T. Show me the money! Associations between tree canopy and hospital costs in cities for cardiovascular disease events in a longitudinal cohort study of 110,134 participants. *Environment international.* 2024;185:108558. doi:10.1016/j.envint.2024.108558

67. Jim CY, van den Bosch CK, Chen WY.. Acute Challenges and Solutions for Urban Forestry in Compact and Densifying Cities. *Journal of Urban Planning and Development*. 2018;144(3):04018025. doi: 10.1061/(ASCE)UP.1943-5444.0000466

68. Putra IGNE, Astell-Burt T, Feng X. Perceived green space quality, child biomarkers and health-related outcomes: A longitudinal study. *Environmental Pollution.* 2022;303:119075. doi:10.1016/j.envpol.2022.119075

69. Garrard GE, Williams NSG, Mata L, Thomas J, Bekessy SA. Biodiversity sensitive urban design. *Conservation letters*. 2018;11(2):e12411. doi:10.1111/conl.12411

70. Bekessy S, Garrard GE, Croeser T, Keogh C, Kirk H, Visintin C. Blueprint for a Nature-Positive Adelaide. 2024. Accessed 7 April 2026. cdn.environment.sa.gov.au/greenadelaide/images/Blueprint_for_a_Nature-Positive_Adelaide_RMIT.pdf

71. Chandrabose M, Gunn L. *Walkability and the built environment: increasing physical activity levels and improving heart health for people living in Australia.* Heart Foundation. 2026

72. Timperio A, Lee A, Gunn L, et al. *The heart of road use, a people-first approach that embeds health in transport planning.* Heart Foundation. 2025. Accessed 7 April 2026. www.healthyactivebydesign.com.au/resources/publications_and_policies

73. Foster S, Kleeman A, Lowe M, et al. *Designing for density: delivering healthy, higher-density neighbourhoods in Australia, Evidence review.* Heart Foundation. 2025. Accessed 7 April 2026. www.healthyactivebydesign.com.au/resources/publications_and_policies

74. Sahlqvist S, Timperio A, Cleland V, et al. *Active school travel.* Heart Foundation. 2025. Accessed 7 April 2026. www.healthyactivebydesign.com.au/resources/publications_and_policies

75. McCridnle Research. *What Australia wants, Neighbourhood design.* Heart Foundation. 2025. Accessed 7 April 2026. www.healthyactivebydesign.com.au/resources/publications_and_policies

76. Heart Foundation. *Blueprint for an active Australia.* 2019. Third edition. www.heartfoundation.org.au/blueprint

77. Davern M, Farrar A, Kendal K, Giles-Corti B. Quality green space supporting health, wellbeing and biodiversity: a literature review. Heart Foundation. 2017. Accessed 7 April 2026. www.healthyactivebydesign.com.au/resources/publications_and_policies

78. The State of Victoria Department of Environment, Land, Water and Planning. *Urban Design Guidelines for Victoria: Element 3, Public spaces.* 2017. Accessed 7 April 2026. www.planning.vic.gov.au/guides-and-resources/guides/urban-design-guidelines-for-victoria

79. Arifwidodo SD, Chandrasiri O, Rueangsom P. Is proximity to parks associated with physical activity and well-being? Insights from 15-Minute Parks Policy Initiative in Bangkok, Thailand. *Sustainability.* 2025;17(16):7457. doi:10.3390/su17167457

80. van den Berg M, Wendel-Vos W, van Poppel M et al. Health benefits of green spaces in the living environment: A systematic review of epidemiological studies. *Urban for urban green.* 2015;14(4):806-816.

81. Sugiyama T, Leslie E, Giles-Corti B, Owen, N. Associations of neighbourhood greenness with physical and mental health: Do walking, social coherence and local social interaction explain the relationships?" *Journal of Epidemiology and Community Health.* 2008;62(5):e9. doi.org/10.1136/jech.2007.064287.

82. Caryl F, Olsen, JR, Astell-Burt T, et al. Urban park features and cardiovascular disease: a prospective analysis of 377,817 UK biobank participants. *Environment international.* 2025:12(206);109913. doi:10.1016/j.envint.2025.109913

83. Heart Foundation. Healthy Active by Design, Physical activity. n.d. Accessed 7 April 2026. www.heartfoundation.org.au/healthy-living/physical-activity

84. Australian Urban Observatory. Public open space. RMIT University. 2025. Accessed 7 April 2026. auo.org.au/portal/metadata/access-to-areas-of-public-open-space/

85. Aldred R. Built Environment interventions to increase active travel: A critical review and discussion. *Current Environmental Health Reports.* 2019;6(4):309–315. doi:10.1007/s40572-019-00254-4

86. Kärmeniemi M, Lankila T, Ikäheimo T, Koivumaa-Honkanen H, Korpelainen R. The Built Environment as a determinant of physical activity: A systematic review of longitudinal studies and natural experiments. *Annals of behavioral medicine*. 2018;52(3): 239–251. doi:10.1093/abm/kax043

87. Smith M, Hosking J, Woodward A, Witten K, et al. Systematic literature review of built environment effects on physical activity and active transport - an update and new findings on health equity. *International Journal of Behavioral Nutrition and Physical Activity.* 2017;14:158. doi:10.1186/s12966-017-0613-9

88. Motomura M, Koohsari MJ, Chien-Yu L, et al. Associations of public open space attributes with active and sedentary behaviors in dense urban areas: A systematic review of observational studies. *Health and Place.* 2022;75:102816. doi:10.1016/j.healthplace.2022.102816

89. Astell-Burt T, Feng X, Kolt GS. Mental health benefits of neighbourhood green space are stronger among physically active adults in middle-to-older age: Evidence from 260,061 people living in Australia. *Preventive Medicine.* 2013;57(5):601–6. doi:10.1016/j.ypmed.2013.08.017

90. Higgs C, Lowe M, Hooper P, et al. Policy relevant health related liveability indicator datasets for addresses in Australia's 21 largest cities. *Scientific Data.* 2023;10(1):113. doi:10.1038/s41597-023-02013-5.

91. Susca T, Gaffin SR, Dell'Osso GR. Positive effects of vegetation: urban heat island and green roofs. *Environmental Pollution*. 2011;159(8–9):2119–26. doi:10.1016/j.envpol.2011.03.007

92. Chou W-Y, Lee C-H, Chang C-Y. Relationships between urban open spaces and humans' health benefits from an ecological perspective: a study in an urban campus. *Landscape and Ecological Engineering.* 2016;12(2):255–267. doi:10.1007/s11355-016-0295-5

93. Barron S, Nitoslawski SA, Wolf KL, et al. Greening blocks: A conceptual typology of practical design interventions to integrate health and climate resilience co-benefits. *International journal of Environmental Research and Public Health.* 2019;16(21):4241. doi:10.3390/ijerph16214241

94. Bowler DE, Buyung-Ali L, Knight TM, Pullin AS. Urban greening to cool towns and cities: A systematic review of the empirical evidence. *Landscape and Urban Planning.* 2010;97(3):147–55. doi:10.1016/j.landurbplan.2010.05.006

95. Heart Foundation. Healthy Active by Design, Public open space, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/public-open-spaces/evidence

96. Hunter RF, Nieuwenhuijsen M, Fabian C, et al. Advancing urban green and blue space contributions to public health. *The Lancet. Public Health.* 2023;8(9):e735-e742. doi:10.1016/s2468-2667(23)00156-1

97. Giles-Corti B, Broomhall MH, Knuiman M, et al. Increasing walking: How important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine.* 2005; 28(2):169–176. doi:10.1016/j.amepre.2004.10.018

98. Power of public spaces, terab. Inclusive design: building stronger communities in public spaces. 2023. Accessed 7 April 2026. www.powerofpublicspaces.org.au/inclusive-design-building-stronger-communities-in-public-spaces/

99. King J, Theocharides-Feldman O. Are girls being designed out of public spaces? 2022. Accessed 7 April 2026. www.lse.ac.uk/research/research-for-the-world/society/are-girls-being-designed-out-of-public-spaces

100. Sandstrom I, Ericsson S, Hedvall P-O. Gendered sustainability: Are public spaces designed for girls good for everyone? Examining female participation as a strategy for inclusive public space. *Cities.* 2024;149:104906. doi:10.1016/j.cities.2024.104906.

101. Edwards N, Hooper P, Knuiman M, et al. Associations between park features and adolescent park use for physical activity. *International Journal of Behavioral Nutrition and Physical Activity.* 2015;12:21. doi:10.1186/s12966-015-0178-4

102. Plan SA. *Guide to the Planning and Design Code.* 2022. Accessed 7 April 2026. plan.sa.gov.au/__data/assets/pdf_file/0010/799939/Guide_to_the_Planning_and_Design_Code.pdf

103. Gregis A, Ghisalberti C, Sciascia S, Sottile F, Peano C. Community garden initiatives addressing health and well-being outcomes: A systematic review of infodemiology aspects, outcomes, and target Populations. *International Journal of Environmental Research and Public Health*. 2021;18:1943. doi:10.3390/ijerph18041943

104. Hasanzadeh K, Ikeda E, Mavoa S, Smith M. Children's physical activity and active travel: A cross-sectional study of activity spaces, sociodemographic and neighborhood associations. *Children's Geographies.* 2023;21(2):287–305. doi:10.1080/14733285.2022.2039901

105. Plan SA. Planning and Design Code, Part 4 — General development policies, Open space and recreation 2026. Accessed 7 April 2026. code.plan.sa.gov.au/home/browse_the_planning_and_design_code#link_CTYOSII

106. Rossiter R, Greig L. *Planning social infrastructure and community services for urban growth areas – theme document.* 2011. Accessed 7 April 2026. www.charlessturt.sa.gov.au/development-and-infrastructure/policy-and-heritage/strategic-planning

107. Williams P, Pocock B. Building 'community' for different stages of life: physical and social infrastructure in master planned communities. *Community Work and Family.* 2010;13(2):71–81. doi:10.1080/13668800902903300

108. Zahnow R. Social infrastructure, social cohesion and subjective wellbeing. *Wellbeing, Space and Society.* 2024;7:100210. doi:10.1016/j.wss.2024.100210

109. Yang Z, Liu C, He L, et al. Social isolation and loneliness increase the risk of coronary heart disease: Insights from a prospective cohort study. *Social science and medicine.* 2025;366:117701. doi:0.1016/j.socscimed.2025.117701

110. Victoria Planning Authority. *Precinct structure planning guidelines: new communities in Victoria, Part 3.* 2021. Accessed 7 April 2026. vpa.vic.gov.au/project/psp-guidelines/

111. Infrastructure Victoria. *Social infrastructure in Melbourne's growth areas.* 2021. Accessed 7 April 2026. assets.infrastructurevictoria.com.au/assets/Resources/Background-paper-Social-infrastructure-in-Melbournes-new-growth-areas-1-2.pdf

112. Heart Foundation. Healthy Active by Design, Community facilities, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/community-facilities/evidence

113. Queensland Government. *Best practice guide for social infrastructure.* 2019. Accessed 7 April 2026. www.statedevelopment.qld.gov.au/infrastructure/projects-and-programs/social-infrastructure

114. Sarkar S, Moylan E, Wu H, et al. *New housing supply, population growth, and access to social infrastructure, AHURI Final Report No. 356.* 2021. doi:10.18408/ahuri73233.

115. Infrastructure Australia. 2021 *Australian Infrastructure Plan.* 2021. Accessed 7 April 2026. www.infrastructureaustralia.gov.au/2021-australian-infrastructure-plan

116. Bagnall AM, Southby K, Jones R, et al. *Systematic review of community infrastructure (place and space) to boost social relations and community wellbeing: Five year refresh, technical summary report.* What Works Centre for Wellbeing. 2023.

117. McShane I, Coffey B. Rethinking community hubs: community facilities as critical infrastructure. *ScienceDirect.* 2022;54:101149. doi:10.1016/j.cosust.2022.101149

118. Sallis JF, Cutter CL, Lou D, et al. Active Living Research: Creating and using evidence to support childhood obesity prevention. *American Journal of Preventive Medicine.* 2014;46(2):195–207.

119. Infrastructure Australia. *An assessment of Australia's future infrastructure needs: the Australian infrastructure audit 6. Social Infrastructure.* 2019. Accessed 7 April 2026. www.infrastructureaustralia.gov.au/publications/australian-infrastructure-audit-2019

120. DataSA. Planning and Design Code Overlays. 2026. Accessed 7 April 2026. data.sa.gov.au/data/dataset/planning-and-design-code-overlays

121. Carmichael L, Prestwood E, Marsh R, et al. Healthy buildings for a healthy city: Is the public health evidence base informing current building policies? *Science of the Total Environment.* 2020;719:137146. doi:10.1016/J.SCITOTENV.2020.137146

122. Croffi J, Kroll D, Soebarto V, et al. Wellbeing fostered by design: a framework for evaluating indoor environment performance. *Buildings & Cities.* 2023;4(1):507–523. doi:10.5334/bc.336

123. Nunayon SS, Zhong L. A mixed-method systematic review of indoor environmental quality (IEQ) gaps and opportunities for future research. *Sustainable Cities and Society.* 2025;130:106535. doi:10.1016/j.scs.2025.106535

124. Australian Building Codes Board. *Handbook: Indoor air quality.* 2023. Accessed 7 April 2026. www.abcb.gov.au/sites/default/files/resources/2022/Handbook-indoor-air-quality.pdf

125. Capasso L, D'Alessandro D. Housing and health: Here we go again. *International Journal of Environmental Research and Public Health.* 2021;18(22):12060. doi:10.3390/IJERPH182212060

126. World Health Organisation. *WHO Housing and health guidelines.* 2018. Accessed 7 April 2026. www.who.int/publications/i/item/9789241550376

127. Australian Academy of Science. *Indoor air: The science of indoor air and pathways to improve indoor air quality in Australia.* 2025. doi:10.82202/2WQH-ZH14

128. Heart Foundation. Healthy Active by Design, Buildings, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/buildings/evidence

129. Mustafa F, Ali J. Active design: Architectural interventions for improving occupational health through reducing sedentary behavior – A systematic review. *American Journal of Health Promotion.* 2022;37(1):93–102. doi:10.1177/08901171221111108

130. Şimşek S, Erkan I, Diker F, Şahin A. Evolution of interior space design criteria on the quality of urban environment: Literature review. *Journal of Design for Resilience in Architecture and Planning.* 2023;4(3):258–285. doi:10.47818/DRARCH.2023.V4I3097

131. Winters M, Buehler R, Götschi T. Policies to promote active travel: Evidence from reviews of the literature. *Current Environmental Health Reports.* 2017;4:278–285. doi:10.1007/S40572-017-0148-X

132. Boeing G, Higgs C, Liu S, et al. Using open data and open-source software to develop spatial indicators of urban design and transport features for achieving healthy and sustainable cities. *The Lancet Global Health.* 2022;10(6):e907–e918. doi:10.1016/S2214-109X(22)00072-9

133. Colenberg S, Jylhä T, Arkesteijn M. The relationship between interior office space and employee health and well-being – a literature review. *Building Research and Information*. 2021;49(3):352–366. doi:10.1080/09613218.2019.1710098

134. Department of Health, Disability and Ageing. Indoor air quality. 2025. Accessed 7 April 2026. www.health.gov.au/topics/environmental-health/about/indoor-air-quality?language=en

135. Fu N, Kim MK, Chen B, et al. Investigation of outdoor air pollutant, PM2.5 affecting the indoor air quality in a high-rise building. *Indoor and Built Environment.* 2022;31(4):895–912. doi:10.1177/1420326X211038279

136. Government of South Australia. *Tobacco and E-Cigarette Products (Smoking Bans) Amendment Regulations 2023 (SA)* under the *Tobacco and E-Cigarette Products Act 1997*. 2023. Accessed 7 April 2026. www.legislation.sa.gov.au/lz?path=/v/r/2023/tobacco%20and%20e-cigarette%20products%20(smoking%20bans)%20amendment%20regulations%202023_119

137. Liu G, Chen H, Yuan Y, Song C. Indoor thermal environment and human health: a systematic review. *Renewable and Sustainable Energy Reviews.* 2024;191:114164. doi:10.1016/j.rser.2023.114164

138. Shahzad S, Gomez Torrez S, Rijal HB, Nicol F. Lack of thermal comfort Is a matter of life and death: a systematic review for older people. *Buildings.* 2025;15(7):1141. doi:10.3390/buildings15071141

139. Hong T, Malik J, Krelling A, et al. Ten questions concerning thermal resilience of buildings and occupants for climate adaptation. *Building and Environment.* 2023;244:110806. doi:10.1016/j.buildenv.2023.110806

140. Peri G, Cirrincione L, Mazzeo D, Matera N, Scaccianoce G. Building resilience to a warming world: a contribution toward a definition of "Integrated Climate Resilience" specific for buildings - Literature review and proposals. *Energy and Buildings.* 2024;315:114319. doi:10.1016/J.ENBUILD.2024.114319

141. Mason H, King CJ, Peden AE, Franklin RC. Systematic review of the impact of heatwaves on health service demand in Australia. *BMC Health Services Research.* 2022;22:960. doi:10.1186/s12913-022-08341-3

142. Amoatey P, Trancoso R, Xu Z, et al. Evaluating the association between heatwave vulnerability index and related deaths in Australia. *Environmental Impact Assessment Review.* 2025;112:107812. doi:10.1016/j.eiar.2025.107812

143. NSW Government. Planning, Thermal performance, Design principles. 2025. Accessed 7 April 2026. www.planningportal.nsw.gov.au/basix-thermal-comfort/design-principles

144. Jimenez MP, DeVille NV, Elliott EG, et al. Associations between nature exposure and health: a review of the evidence. *International Journal of Environmental Research and Public Health.* 2021;18:4790. doi:10.3390/ijerph18094790

145. Blume C, Garbazza C, Spitschan M. Effects of light on human circadian rhythms, sleep and mood. *Somnologie - Current Sleep Research and Concepts.* 2019;23(3):147–156. doi:10.1007/s11818-019-00215-x

146. Ardabili GN, Wang J, Wang N. A systematic literature review: Building window's influence on indoor circadian health. *Renewable and Sustainable Energy Reviews.* 2023;188:113796. doi:10.1016/j.rser.2023.113796

147. Zhong W, Schröder T, Bekkering J. Biophilic design in architecture and its contributions to health, well-being, and sustainability: a critical review. *Frontiers of Architectural Research.* 2022;11(1):114–141. doi:10.1016/j.foar.2021.07.006

148. Sedghikhanshir A, Montelli R. Biophilic design interventions and properties: a scoping review of nature-based features in buildings. *Buildings.* 2026;16(3):515. doi:0.3390/buildings16030515

149. Zandi A, Wung S-F. Health effects of plants, light and natural elements of biophilic interventions in confined settings: a systematic review. *Frontiers in physiology.* 2025;16:1700518. doi:10.3389/fphys.2025.1700518

150. Australian Centre for Disease Control. enHealth guidance — Potential health effects of mould in the environment. 2025. Accessed 7 April 2026. www.cdc.gov.au/resources/publications/enhealth-guidance-potential-health-effects-mould-environment?language=en

151. Coulburn L, Miller W, Susilawati C. Onset characteristics and breadth of occupants' long-lasting building-related symptoms attributed to living in damp housing conditions in Australia: qualitative insights. *Building and Environment.* 2024;225:111432. doi:10.1016/J.BUILDENV.2024.111432

152. Department of Health, Disability and Ageing. Mould related-illness. 2025. Accessed 7 April 2026. www.health.gov.au/resources/collections/mould-related-illness

153. Arundel J, Lowe M, Hooper P, et al. *Creating liveable cities in Australi*a. 2017. Accessed 7 April 2026. apo.org.au/node/113921

154. McGreevy M, Harris P, Delaney-Crowe T, et al. How well do Australian government urban planning policies respond to the social determinants of health and health equity? *Land Use Policy.* 2020;99:105053. doi:10.1016/j.landusepol.2020.105053

155. Ewing R, Cervero R. Travel and the built environment. *Journal of the American Planning Association.* 2010;76(3):265–294. doi:10.1080/01944361003766766

156. Hahm Y, Yoon H, Choi Y. The effect of built environments on the walking and shopping behaviors of pedestrians; a study with GPS experiment in Sinchon retail district in Seoul, South Korea. *Cities.* 2019;89:1–13. doi:10.1016/j.cities.2019.01.020

157. Fang C, Homma R, Qiu T. A bibliometrics analysis related to the built environment and walking. *Sustainability.* 2024;16:2850. doi:10.3390/su16072850

158. Gunn LD, Mavoa S, Boulange C, et al. Designing healthy communities: Creating evidence on metrics for built environment features associated with walkable neighbourhood activity centres. *International Journal of Behavioral Nutrition and Physical Activity.* 2017;14:164. doi:10.1186/s12966-017-0621-9

159. Heart Foundation. Healthy Active by Design, Destinations, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/destinations/evidence

160. Giuffrida N, Mölter A, Pilla F, Carroll P, Ottomanelli M. On the equity of the x-minute city from the perspective of walkability. *Transportation Engineering.* 2024;16:100244. doi:10.1016/j.treng.2024.100244

161. Cerin E, Leslie E, du Toit L, Owen N, Frank LD. Destinations that matter: associations with walking for transport. *Health and Place.* 2007;13(3):713–724. doi:10.1016/j.healthplace.2006.11.002

162. Cerin E, Barnett A, Shaw JE, et al. From urban neighbourhood environments to cognitive health: a cross-sectional analysis of the role of physical activity and sedentary behaviours. *BMC Public Health.* 2021;21:2320. doi:10.1186/s12889-021-12375-3

163. King TL, Bentley R, Thornton LE, Kavanagh A. Does the presence and mix of destinations influence walking and physical activity? *International Journal of Behavioral Nutrition and Physical Activity.* 2015;12:115. doi:10.1186/s12966-015-0279-0

164. Gunn LD, King T, Mavoa S, et al. Identifying destination distances that support walking trips in local neighborhoods. *Journal of Transport and Health.* 2017;5:133–141. doi:10.1016/j.jth.2016.08.009

165. Sugiyama T, Kubota A, Sugiyama M, Cole R, Owen N. Distances walked to and from local destinations: age-related variations and implications for determining buffer sizes. *Journal of Transport and Health.* 2019;15:100621. doi:10.1016/j.jth.2019.100621

166. Moreno C, Allam Z, Chabaud D, Gall C, Pratlong F. Introducing the "15-minute city": sustainability, resilience and place identity in future post-pandemic cities. *Smart Cities.* 2021;4:93–111. doi:10.3390/smartcities4010006

167. Fonseca F, Ribeiro PJG, Conticelli E, et al. Built environment attributes and their influence on walkability. *International Journal of Sustainable Transportation.* 2022;16(7):660–679. doi:10.1080/15568318.2021.1914793

168. Millard-Ball A, Reginald M, Yusuf Y, Bian C. Global health and climate benefits from walking and cycling infrastructure. *PNAS.* 2025;122(24):e2422334122. doi.org/10.1073/pnas.2422334122

169. Godfrey B, Armstrong B, Davison G, de Vos Malan J, Gleeson B. *Delivering sustainable urban mobility*. Australian Council of Learned Academies. 2015.

170. Engineers Australia. *Towards safer and more liveable urban streets: Transport Australia Society discussion paper.* 2024. Accessed 7 April 2026. www.engineersaustralia.org.au/publications/towards-safer-and-more-liveable-urban-streets

171. Veitch J, Bagley S, Ball K, Salmon J. Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health and place*. 2006;12(4):383–93. doi:10.1016/j.healthplace.2005.02.009

172. Giles-Corti B, Vernez-Moudon A, Reis R, et al. City planning and population health: a global challenge. *The Lancet.* 2016;388(10062):2912–24. doi:10.1016/ S0140-6736(16)30066-6

173. Heart Foundation. Healthy Active by Design, Movement networks, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/movement-networks/evidence

174. CROW. *Design manual for bicycle traffic.* 2016. Accessed 7 April 2026. crowplatform.com/product/design-manual-for-bicycle-traffic/

175. Transport for NSW. Cycleway design toolbox: designing for cycling and micromobility. 2020. Accessed 7 April 2026. www.transport.nsw.gov.au/system/files/media/documents/2023/Cycleway-Design-Toolbox-Web.pdf

176. National Association of City Transport Officials. *Global Street Design Guide.* 2016. Accessed 7 April 2026. nacto.org/publication/global-street-design-guide/

177. National Association of City Transport Officials. *Designing for All Ages and Abilities: Contextual Guidance for High-Comfort Bicycle Facilities.* 2017. Accessed 7 April 2026. nacto.org/publication/urban-bikeway-design-guide/planning-and-developing-a-bikeable-city/designing-for-all-ages-and-abilities/

178. Nau T, Bauman A, Bellew W, Giles-Corti B, Smith BJ. An analysis of the legal framework influencing walking in Australia. *Public Health Research and Practice.* 2023;33(1):e32122205. doi.org/10.17061/phrp32122205.

179. Saelens BE, Sallis JF, Frank LD. Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning literatures. *The Society of Behavioral Medicine.* 2003;25(2):80–91.

180. Dill J. Measuring network connectivity for bicycling and walking. 83rd Annual Meeting of the Transportation Research Board, 2024;Washington DC. Accessed 7 April 2026. api.semanticscholar.org/CorpusID:131099671

181. Fishman E, Naseri M, Davies L, Tran J, Katsu T. *Prioritising Active Transport.* 2024. Accessed 7 April 2026. austroads.gov.au/publications/active-travel/ap-r711-24

182. Brown V, Peel O, Jackson E. *Review of Movement and Place Guidance.* 2025. Accessed 7 April 2026. www.austroads.gov.au/publications/network/ap-r739-25

183. Jones P, Boujenko N, Marshall S. *Link and Place: A Guide to Street Planning and Design.* Local Transport Today;2007.

184. Infrastructure and Transport Ministers. *National Road Safety Strategy 2021–2030.* 2021. Accessed 7 April 2026. www.roadsafety.gov.au/nrss

185. Government of South Australia. *South Australia's Road Safety Action Plan 2025–2027*. 2025. Accessed 7 April 2026. dit.sa.gov.au/thinkroadsafety/road_safety_strategy/action-plan-2025-2027

186. Burns T, Oram M-Y, Claris S. *Cycling for everyone: a guide for inclusive cycling in cities and towns.* Sustrans. 2020. Accessed 7 April 2026. www.walkwheelcycletrust.org.uk/media/7377/cycling_for_everyone-sustrans-arup.pdf

187. Dekker, H-J. *Cycling pathways: the politics and governance of Dutch cycling infrastructure, 1920-2020.* First edition. Amsterdam University Press;2021. doi:10.1515/9789048556007

188. Titze S, Giles-Corti B, Knuiman MW, et al. Associations between intrapersonal and neighborhood environmental characteristics and cycling for transport and recreation in adults: baseline results from the RESIDE study. *Journal of Physical Activity and Health.* 2010;7(4):423–31. doi:10.1123/jpah.7.4.423.

189. Buehler R, Dill J. *Bikeway networks: A review of effects on cycling*. *Transport Reviews.* 2016;36(1):9–27. doi.org/10.1080/01441647.2015.1069908

190. World Health Organization. *Speed Management*. 2023. Second edition. Accessed 7 April 2026. www.who.int/publications/m/item/speed-management–a-road-safety-manual-for-decision-makers-and-practitioners.-2nd-edition

191. World Health Organization. *Speed Management*. 2008. First edition. Accessed 7 April 2026. cdn.who.int/media/docs/default-source/documents/health-topics/road-traffic-injuries/speed-management-manual.pdf

192. Austroads. *Guide to Traffic Management Part 8: Local Area Traffic Management.* 2016. Accessed 7 April 2026. www.austroads.gov.au/publications/traffic-management/agtm22/media/AGTM08-16_Guide-to-Traffic-Management-Part-8-Local-Area_Traffic_Management.pdf

193. Black J. Transport institutions and organisations in the formulation of policies for Australian local area traffic management: a 50-year retrospective. *Journal of Traffic and Transportation Engineering.* 2023;10(5):866–77. doi:10.1016/j.jtte.2023.07.003

194. International CPTED Association. CPTED in brief. 2022. Accessed 7 April 2026. Accessed 7 April 2026. www.cpted.net/Primer-in-CPTED

195. Cozens P, Love T. A review and current status of crime prevention through environmental design (CPTED). *Journal of Planning Literature.* 2015;30(4):393–412. doi:10.1177/0885412215595440

196. Duong M. In detail: CPTED. n.d. Accessed 7 April 2026. dcj.colorado.gov/dcj-offices/ors/doc-res/brf-cpted2

197. National Crime Prevention Council. *Crime Prevention Through Environmental Design Guidebook.* 2003. Accessed 7 April 2026. www.ncpc.org.sg/cpted/

198. Centre for Excellence in Universal Design. The 7 principles. 2025. Accessed 7 April 2026. universaldesign.ie/about-universal-design/the-7-principles

199. Engineers Australia. *Universal design for Transport, Transport Australia Society discussion paper.* 2022. Accessed 7 April 2026. www.engineersaustralia.org.au/sites/default/files/2022-10/universal-design-for-transport-discussion-paper.pdf

200. National Association Of City Transportation Officials. *Urban bikeway design guide.* Island Press;2022.

201. Warburton DER, Bredin SSD. Health benefits of physical activity: a systematic review of current systematic reviews. *Cardiology.* 2017;32(5):541–56. doi:10.1097/HCO.0000000000000437

202. National Association Of City Transportation Officials and Global Designing Cities Initiative. *Designing Streets for Kids.* Island Press;2020.

203. Chandrabose M, Hadgraft N, Owen N, Mavoa S, Sugiyama T. Joint associations of neighbourhood walkability and greenery with walking among middle-aged and older adults: findings from diverse urban settings in Australia. *Health and Place.* 2024;89:103334. doi:10.1016/j.healthplace.2024.103334

204. Office for Design and Architecture. *Principles of good design.* 2019. Accessed 7 April 2026. www.dhud.sa.gov.au/__data/assets/pdf_file/0007/1171078/ODASA-Principles-of-Good-Design_2025-Update_WEB-FINAL.pdf

205. Li P, Wang Z-H. Environmental co-benefits of urban greening for mitigating heat and carbon emissions. *Journal of Environmental Management.* 2021;293:112963. doi:10.1016/j.jenvman.2021.112963

206. The City of Unley. *Walking and Cycling Plan 2022–2027.* 2022. Accessed 7 April 2026. www.unley.sa.gov.au/files/assets/public/v/1/council/about-the-council/unley-walking-and-cycling-plan-2022-2027.pdf

207. Biehl A, Chen Y, Sanabria-Véaz K, Uttal D, Stathopoulos A. Where does active travel fit within local community narratives of mobility space and place? *Transportation Research Part A: Policy and Practice.* 2019;123:269-287. doi:10.1016/j.tra.2018.10.023

208. Department of Planning, Industry and Environment. *Low rise housing diversity design guide for development applications.* 2020. Accessed 7 April 2026. www.planning.nsw.gov.au/policy-and-legislation/housing/low-rise-housing-diversity/design-guides-for-low-rise-housing-diversity

209. National Housing Supply and Affordability Council. *State of the Housing System.* 2025. Accessed 7 April 2026. nhsac.gov.au/sites/nhsac.gov.au/files/2025-05/ar-state-housing-system-2025.pdf

210. Madigan D. *Bluefield housing as alternative infill for the suburbs.* England: Taylor and Francis Unlimited; 2023.

211. Chakraborty A, McMillan A. Is housing diversity good for community stability? Evidence from the housing crisis. *Journal of Planning Education and Research.* 2022;42(2):150–161. doi:10.1177/0739456X188107

212. Alberta Real Estate Foundation. *Enabling housing choice project, Guidebook Module 2, The Importance of Housing Diversity.* 2024. Accessed 7 April 2026. ruraldevelopment.ca/resource_category/enabling-housing-choice

213. Rolfe S, Garnham L, Godwin J. Housing as a social determinant of health and wellbeing: developing an empirically informed realist theoretical framework. *BMC Public Health.* 2020;20:1138. doi:10.1186/s12889-020-09224-0

214. Baker E, Bentley R, Lester L, Beer A. Housing affordability and residential mobility as drivers of locational inequality in health. *Applied Geography.* 2016;72:65-75. doi:10.1016/j.apgeog.2016.05.007

215. Chung RY-N, Chung GK-K, Gordon D, et al. Housing affordability effects on physical and mental health: household survey in a population with the world's greatest housing affordability stress. *Journal of Epidemiology and Community Health.* 2020;74(2):164–72. doi:10.1136/jech-2019-212286

216. James A, Rowley S, Stone W, et al. *Older people living in Australia and the housing aspirations gap.* 2019. doi:10.18408/ahuri-8117301

217. The Treasury. Increasing housing supply. n.d. Accessed 7 April 2026. treasury.gov.au/policy-topics/housing/increasing-housing-supply

218. Heart Foundation. Healthy Active by Design, Housing diversity, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/housing-diversity/evidence

219. Randolph B, Tice A. Suburbanizing disadvantage in Australian cities: sociospatial change in an era of Neoliberalism. *Journal of Urban Affairs.* 2014;36(sup1):384–399. doi:10.1111/juaf.12108

220. He Z, Zhang Y. Connecting built form diversity and housing mix with refining diversity measurement under the general framework. *Cities.* 2025;166:106243. doi:10.1016/j.cities.2025.106243

221. Allen N, Haarhoff E, Beattie L. Enhancing liveability through urban intensification: the idea and role of neighbourhood. *Cogent Social Sciences.* 2018;4:1,1442117. doi:10.1080/23311886.2018.1442117

222. Gurram N, Rowley S, Milligan V, et al. *Inquiry into increasing affordable housing supply: Evidence-based principles and strategies for Australian policy and practice*. 2018. doi:10.18408/ahuri-7313001

223. Giles-Corti B, Ryan K, Foster S. *Increasing density in Australia: maximising the health benefits and minimising harm.* Heart Foundation. 2012. Accessed 7 April 2026. www.parliament.act.gov.au/__data/assets/pdf_file/0003/373593/16c_Heart_Foundation_-_ACT_Attachment_3.pdf

224. Minnery J, Knight J, Byrne J, Spencer J. Bounding neighbourhoods: how do residents do it? *Planning Practice and Research.* 2019;24(4):471–493. doi:10.1080/02697450903327170

225. Talen E. Design that enables diversity: The complications of a planning ideal. *Journal of Planning Literature.* 2006;20(3):233-249. doi: 10.1177/0885412205283104

226. PlanSA. Code Amendment ID: 10011, Accommodation diversity. 2025. Accessed 7 April 2026. plan.sa.gov.au/have_your_say/code-amendments/view_consultation_item?catsid=10011

227. Bennet A. Housing diversity: adapting 1.0 infrastructure for 3.0 lives. 2018. Accessed 7 April 2026. architectureau.com/articles/housing-diversity-adapting-1-infrastructure-for-3-lives/

228. Queensland Government, State Development, Infrastructure and Planning. What is gentle density? 2023. Accessed 7 April 2026. www.statedevelopment.qld.gov.au/news-and-events/what-is-gentle-density

229. NSW Government. Movement and Place, Housing diversity. n.d. Accessed 7 April 2026. www.movementandplace.nsw.gov.au/place-and-network/built-environment-indicators/housing-diversity

230. Appiah D, Luitel S, Fuentes N, Nwabuo CC. Perceived neighborhood social cohesion and the 10-year risk of cardiovascular disease in low- and middle-income countries: The World Health Organization study on global aging and adult health. *Health and place.* 2022;77:102895. doi:10.1016/j.healthplace.2022.102895

231. Kress S, Razum O, Zolitschka KA, Breckenkamp J, Sauzet O. Social cohesion as a mechanism behind neighbourhood effects on mental or physical health. *European journal of public health.* 2019;29(Supplement_4). doi:10.1093/eurpub/ckz186.242

232. Switalski M, Torres MG, Grêt-Regamey A. The 3P's of place-making: measuring place-making through the latent components of person, procedures and place. *Landscape and Urban Planning.* 2023;238:104817. doi:10.1016/j.landurbplan.2023.104817

233. Akbar PNG, Edelenbos J. Positioning placemaking as a social process: a systematic literature review. *Cogent Social Sciences.* 2021;7(1):1905920. doi:10.1080/23311886.2021.1905920

234. Heart Foundation. Healthy Active by Design, Sense of place, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/sense-of-place/evidence

235. Jeleński T. Inclusive placemaking: building future on local heritage. In: Amoruso G, ed. *Putting tradition into practice: heritage, place and design.* International Publishing;2018;3:783–93.

236. Porter L, Jackson S, Johnson D. *Planning with Indigenous peoples: Learning from practice in Australia.* Routledge; 2018.

237. Cameron L, Eiman M. Embodied experiences: integrating indigenous sensory knowledge in architectural education. *Architectural science review.* 2025;1–11. doi:10.1080/00038628.2025.2523265

238. Mosler S. Everyday heritage concept as an approach to place-making process in the urban landscape. *Journal of Urban Design*. 2019;24(5):778–793. doi:10.1080/13574809.2019.1568187

239. Malone G. Ways of Belonging: Reconciliation and Adelaide's public space Indigenous cultural markers. *Geographical research.* 2007;45(2):158–66. doi:0.1111/j.1745-5871.2007.00445.x

240. Wensing E. Planning laws and Aboriginal and Torres Strait Islander peoples' rights and interests. *Australian planner.* 2023;59(1):1–13. doi:10.1080/07293682.2023.2216318

241. Kingsley J, Townsend M, Henderson-Wilson C, Bolam B. Developing an exploratory framework linking Australian Aboriginal Peoples' connection to Country and concepts of wellbeing. *International journal of environmental research and public health.* 2013;10(2):678–98. doi:10.3390/ijerph10020678

242. Gehl J, Svarre B. *How to study public life.* 1st ed. Island Press/Center for Resource Economics;2013.

243. Cilliers EJ, Timmermans W. The importance of creative participatory planning in the public place-making process. *Environment and Planning. B, Planning & Design.* 2014;41(3):413–29. doi:10.1068/b39098

244. Somarriba Arechavala N, Zarzosa Espina P, López Pastor AT. The importance of the neighbourhood environment and social capital for happiness in a vulnerable district: the case of the Pajarillos District in Spain. *Journal of happiness studies.* 2022;23(5):1941–65. doi:10.1007/s10902-021-00479-x

245. Mullenbach LE, Larson LR, Floyd MF, et al. Cultivating social capital in diverse, low-income neighborhoods: The value of parks for parents with young children. Landscape and urban planning. 2022;219:104313. doi:10.1016/j.landurbplan.2021.104313

246. Murphy M, Badland H, Jordan H, Koohsari MJ, Giles-Corti B. Local food environments, suburban development, and BMI: a mixed methods study. *International Journal of Environmental Research and Public Health.* 2108;15(7):1392. doi:10.3390/ijerph15071392

247. Lowe M, Arundel J, Hooper P, et al. Liveability aspirations and realities: implementation of urban policies designed to create healthy cities in Australia. *Social Science and Medicine.* 2020;245:112713. doi:10.1016/J.SOCSCIMED.2019.112713

248. Backholer K, Baum F, Finlay S, et al. Australia in 2030: what is our path to health for all? *The Medical journal of Australia.* 2021;214(8 supplement):s1–s40. doi:10.5694/MJA2.51020

249. Vieira LC, Serrao-Neumann S, Howes M. Daring to build fair and sustainable urban food systems: a case study of alternative food networks in Australia. *Agroecology and Sustainable Food Systems.* 2021;45(3):344–365. doi:10.1080/21683565.2020.1812788

250. Miller V, Rangarajan S, Gupta R, et al. Fruit, vegetable, and legume intake, and cardiovascular disease and deaths in 18 countries (PURE): a prospective cohort study. *The Lancet.* 2017;390(10107):2037–49. doi:10.1016/S0140-6736(17)32253-5

251. Aune D, Giovannucci E, Boffetta P, et al. Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality: a systematic review and dose-response meta-analysis of prospective studies. *International journal of epidemiology.* 2017;46(3):1029-1056. doi:10.1093/ije/dyw319.

252. Willett W, Rockström J, Rockström J, et al. Food in the anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet.* 2019;393:447–92. doi:10.1016/S0140-6736(18)31788-4

253. South Australian Urban Food Network. A collection of resources to get you going and growing. n.d. Accessed 7 April 2026. www.saurbanfood.org/our-library

254. Carrad A, Turner L, Rose N, Charlton K, Reeve B. Local innovation in food system policies: a case study of six Australian local governments. *Journal of Agriculture, Food Systems, and Community Development.* 2022;12(1):115–139. doi:10.5304/jafscd.2022.121.007

255. Barbour L, Lindberg R, Woods J, Charlton K, Brimblecombe J. Local urban government policies to facilitate healthy and environmentally sustainable diet-related practices: a scoping review. *Public Health Nutrition.* 2021;25(2):471–487. doi:10.1017/S1368980021004432

256. Summerhayes L, Baker D. Trans-governance and food systems (Tr-GaF) for food policy integration: a case study of the Australian food policy landscape. *Food Policy.* 2024;128:102736. doi:10.1016/j.foodpol.2024.102736

257. Heart Foundation. Healthy Active by Design, Healthy food, Evidence. n.d. Accessed 7 April 2026. www.healthyactivebydesign.com.au/design-features/healthy-food

258. James S, Friel S. An integrated approach to identifying and characterising resilient urban food systems to promote population health in a changing climate. *Public Health Nutrition.* 2015;18(13):2498–2508. doi:10.1017/S1368980015000610

259. Dangerfield F, Ball K, Dickson-Swift V, Thornton L. Planning healthy food environments: an analysis of local government municipal public health and wellbeing policy in regional Victoria. *Health Promotion Journal of Australia.* 2025;36:e898. doi:10.1002/HPJA.898

260. Higgs C, Simons K, Badland H, Giles-Corti B. Cross-sectional evidence of the cardiometabolic health benefits of urban liveability in Australia. *Urban Sustainability.* 2021;1:37. doi:10.1038/s42949-021-00039-5

261. Needham C, Orellana L, Allender S, Sacks G, Blake MR, Strugnell C. Food retail environments in Greater Melbourne 2008-2016: longitudinal analysis of intra-city variation in density and healthiness of food outlets. *International journal of environmental research and public health.* 2020;17(4):1321. doi:10.3390/ijerph17041321

262. Bivoltsis A, Christian H, Ambrosini GL, et al. The community food environment and its association with diet, health or weight status in Australia: A systematic review with recommendations for future research. *Health promotion journal of Australia.* 2023;34(2):328–65. doi:10.1002/hpja.679

263. Shannon R, Mant J, Dessewffy M, Harrison L. 20-minute neighbourhoods: creating a more liveable Melbourne. *Journal of Transport and Health.* 14(Supp):100773. doi:10.1016/j.jth.2019.100773

264. Boeing G, Higgs C, Liu S, et al. Using open data and open-source software to develop spatial indicators of urban design and transport features for achieving healthy and sustainable cities. *The Lancet Global Health.* 2022;10:e907–e918. doi:10.1016/S2214-109X(22)00072-9

265. Bayly R, Pustz J, Stopka TJ, Metzger J, Waters MC. Transit bus access to healthy, affordable food: a novel geographic information system (GIS) and community-informed analysis. *SSM – Population Health.* 2025;29:101753. doi:10.1016/j.ssmph.2025.101753

266. Australian Urban Observatory. Australian Urban Observatory liveability indicators map. 2026. Accessed 7 April 2026. auo.org.au/using-the-indicators/

267. Bivoltsis A, Trapp G, Knuiman M, Hooper P, Ambrosini GL. The influence of the local food environment on diet following residential relocation: longitudinal results from RESIDential Environments (RESIDE). *Public health nutrition.* 2020;23(12):2132–44. doi:10.1017/S1368980019005111

268. Trapp GSA, Hooper P, Thornton L, et al. Association between food-outlet availability near secondary schools and junk-food purchasing among Australian adolescents. *Nutrition.* 2021;91–92. doi:10.1016/j.nut.2021.111488

269. Lam TM, Vaartjes I, Grobbee DE, Karssenberg D, Lakerveld J. Associations between the built environment and obesity: an umbrella review. *International journal of health geographics.* 2021;20(1):7. doi:10.1186/s12942-021-00260-6

270. Atanasova P, Kusuma D, Pineda E, Frost G, Sassi F, Miraldo M. The impact of the consumer and neighbourhood food environment on dietary intake and obesity-related outcomes: A systematic review of causal impact studies. *Social science and medicine.* 2022;299:114879. doi:10.1016/j.socscimed.2022.114879

271. Bao KY, Tong D, Plane DA, Buechler S. Urban food accessibility and diversity: exploring the role of small non-chain grocers. *Applied Geography.* 2020;125:102275. doi:10.1016/j.apgeog.2020.102275

272. Gunapala R, Gangahagedara R, Wanasinghe WCS, et al. Urban agriculture: a strategic pathway to building resilience and ensuring sustainable food security in cities. *Farming System.* 2025;3(3):100150. doi:10.1016/j.farsys.2025.100150

273. Zheng Z-W, Chou R-J. The impact and future of edible landscapes on sustainable urban development: a systematic review of the literature. *Urban Forestry and Urban Greening.* 2023;84:127930. doi:10.1016/j.ufug.2023.127930

274. Laidlaw M, Alankarage DH, Reichman S, Taylor MP, Ball AS. Assessment of soil metal concentrations in residential and community vegetable gardens in Melbourne, Australia. *Chemosphere.* 2018;199:303–311. doi:10.1016/j.chemosphere.2018.02.044

275. Sarker AH, Bornman JF, Marinova D. A framework for integrating agriculture in urban sustainability in Australia. *Urban Science.* 2019;3(2):50. doi:10.3390/urbansci3020050

276. Fox-Kämper R, Wesener A, Münderlein D, Sondermann M, McWilliam W, Kirk N. Urban community gardens: an evaluation of governance approaches and related enablers and barriers at different development stages. *Landscape and Urban Planning.* 2018;170:59–68. doi:10.1016/j.landurbplan.2017.06.023.

277. Sharp E, Tsang S, Egli V. Children's food gardening: valuing experiential, intergenerational and multi-cultural learning. *Kōtuitui: New Zealand Journal of Social Sciences Online.* 2025;20(4):738–762. doi:10.1080/1177083X.2024.2425427

278. Hake BJ. Gardens as learning spaces: intergenerational learning in urban food gardens. *Journal of Intergenerational Relationships.* 2017;15(1):25–38. doi:10.1080/15350770.2017.1260369

279. Wang PC, Huang JW, Lee DC. Participation in intergenerational food and agriculture education programs effectively promotes place attachment. *International Journal of Environmental Research and Public Health*. 2023;20:4616. doi:10.3390/IJERPH20054616

280. Carrad A, Rose N, Charlton K, Reeve B. Local governments as gatekeepers to community gardens: what does 'support' mean?" *Local Environment.* 2024:29(7):849–64. doi:10.1080/13549839.2023.2287042

281. LGA. Enabling resilient food systems in SA. 2022. Accessed 7 April 2026. www.lga.sa.gov.au/members/services/research-and-publications/library/2020/enabling-resilient-food-systems-sa

282. Carrad A, Aguirre-Bielschowsky I, Rose N, Charlton K, Reeve B. Food system policy making and innovation at the local level: exploring the response of Australian local governments to critical food systems issues. *Health Promotion Journal of Australia.* 2023;34:488–499. doi:10.1002/hpja.626.

283. Buxton M, Butt A. *The future of the fringe: the crisis in peri-urban planning.* CSIRO Publishing;2020.

284. Wadduwage S. Peri-urban agricultural land vulnerability due to urban sprawl – a multi-criteria spatially-explicit scenario analysis. *Journal of Land Use Science.* 2018;13(3):358-374. doi:10.1080/1747423X.2018.1530312

285. Vieira LC. Urban Approaches to Sustainability: Food. Brinkmann R ed. In *The Palgrave Handbook of Global Sustainability*. Cham: Springer International Publishing;2023. doi:10.1007/978-3-031-01949-4_89

286. Mohan SV, Hemalatha M, Amulya K, et al. Decentralized urban farming through keyhole garden: a case study with circular economy and regenerative perspective. *Materials Circular Economy.* 2020;2(1):12. doi:10.1007/S42824-020-00011-1

287. Meng X. Understanding the effects of site-scale water-sensitive urban design (WSUD) in the urban water cycle: a review. *Blue-Green Systems.* 2022;4(1):45–57. doi:10.2166/bgs.2022.026

288. Wondmagegn BY, Xiang J, Dear K, et al. Impact of heatwave intensity using excess heat factor on emergency department presentations and related healthcare costs in Adelaide, South Australia. *Science of The Total Environment.* 2021;781:146815. doi:10.1016/j.scitotenv.2021.146815

289. Deilami K, Kamruzzaman M, Liu Y. Urban heat island effect: a systematic review of spatio-temporal factors, data, methods, and mitigation measures. *International Journal of Applied Earth Observation and Geoinformation.* 2018;67:30–42. doi:10.1016/j.jag.2017.12.009

290. Herath P, Thatcher M, Jin H, Bai X. Comparing the cooling effectiveness of operationalisable urban surface combination scenarios for summer heat mitigation. *Science of the Total Environment.* 2023;874:162476. doi:10.1016/j.scitotenv.2023.162476

291. Zhang Y, Smith JP, Tong D, Turner II BL. Optimizing the co-benefits of food desert and urban heat mitigation through community garden planning. *Landscape and Urban Planning.* 2022;226:104488. doi:10.1016/j.landurbplan.2022.104488

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