



# The Case for Good Design: Urban Design

<A guide for government>

OFFICE OF  
THE VICTORIAN  
GOVERNMENT  
ARCHITECT





“We cannot afford not to invest in good design. Good design is not just about the aesthetic improvement of our environment, it is as much about improved quality of life, equality of opportunity and economic growth.”

Sir Stuart Lipton



Project: Caulfield to Dandenong Open Space Corridor  
Architect: Cox Architecture  
Landscape Architect: Aspect Studios  
Photographer: Peter Bennetts

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This is an extract of one chapter from the OVGA publication 'The Case for Good Design'.

# Executive summary



“A great building must begin with the unmeasurable, must go through measurable means when it is being designed and in the end must be unmeasurable.”

Louis Kahn, Architect 1901-74



Our everyday lives are touched by the places that surround us. The qualities of these places – our buildings, streets and parks – inform our interactions, understandings, wellbeing and memories. A review of research exploring healthcare, education, workplaces, housing, justice, urban design and transport projects demonstrates that good design enables people, places and the environment to thrive.

## **WHAT IS GOOD DESIGN?**

‘What is good design? It’s a seemingly simple question that’s surprisingly difficult to answer. The more you think about it, the more complex the question becomes. Not only does “good design” mean different things to different people, it also changes at different times and in different contexts.’<sup>1</sup>

Good design comes in many forms and is defined by much more than how something looks. It refines the purpose and aspiration of a project, improves how it works, creates additional benefits and elevates how people feel and behave in the final outcome. Good design creates inspiring places and greater, lasting financial value. And of course, good design also looks and feels good.

## **MEASURING THE IMPACT OF DESIGN**

There is extensive academic and scientific research that explores the benefits of well-designed places, and the effect of poor design on our lives. This research demonstrates that good design has far-reaching benefits, such as supporting health and wellbeing, improving environmental quality and improving productivity. As links between design and neuroscience, health and human behaviour continue to emerge, it is important that this evidence-base informs decision making about the shape, nature and function of our cities, buildings and landscapes.

**MAKING THE CASE**

It has been demonstrated that 'Good design does not cost more when measured across the lifetime of the building or place.'<sup>2</sup> Investments in the design of our built environment have a lasting legacy on their place and the people who visit. Yet design is often considered a superficial afterthought.

Good design may cost more in the short term, but this investment is generally paid off over the lifetime of the building or place. Construction costs are typically 2–3 per cent of the whole-life costs, while operating costs are estimated to be 85 per cent. In comparison, design costs are small, between 0.3–0.5 per cent, yet they can significantly affect the function of a project across its lifespan, and the operating costs associated with this.<sup>3</sup>

The research demonstrates a host of benefits of good design, including:

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well-designed hospitals help patients heal faster, support staff performance, recruitment and retention, and reduce operating costs

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well-designed schools improve student performance, and support staff performance, recruitment and retention

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well-designed police stations, courts and prisons help foster fairness and reduce recidivism in our justice system

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well-designed workplaces support productivity

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well-designed housing creates a greater sense of community and reduces ongoing costs

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well-designed urban spaces improve wellbeing and social connectedness

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well-designed transport systems boost productivity, reduce congestion and pollution

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This report is an overview of the research on the impact of the design of our surroundings. It is hoped that the findings generate conversations about the importance of embedding design quality in every stage of a project's lifecycle and inform decision-making about our built environment. It may also encourage others to share the evidence they have uncovered and influence researchers to investigate gaps.

Supported by this evolving evidence, quality design is at the heart of a successful place – it is not an optional extra. Quality design ensures a positive legacy to become the heritage of the future.

# Urban design

Urban design is not just a well-designed building. It includes the spaces between buildings, infrastructure, landscape elements, plazas or streetscape elements. Good urban design is central to ensuring the liveability of our cities and regional towns.

Well-designed civic buildings, such as libraries, galleries, performing arts centres and community centres are often the cornerstones of our neighbourhoods, towns and cities. Public open spaces, including parks, gardens, waterways, civic squares, streets and laneways, support health and wellbeing by providing places for social interaction, recreation and the ability to connect with nature. Green spaces often serve ecological functions such as protecting biodiversity, reducing the heat-island effect, and improving stormwater and air quality, and are essential for resilience to extreme weather events such as heatwaves, storms and floods.

Public places are by definition accessible to everyone. Civic buildings and public open spaces are central to the vitality of our communities, providing places for people to come together for enriching social, cultural and recreational experiences. These places serve as important social and environmental infrastructure that helps build community by contributing to local character, identity, and pride, including our sense of belonging.





### MEASURING GOOD DESIGN

Measuring good urban design requires quantitative and qualitative data that works from a baseline for comparison. In 1994, a baseline was created through a survey of the City of Melbourne by Jan Gehl Architects. Gehl returned to Melbourne in 2004 to conduct a new Public Life and Public Space survey, which demonstrated that significant urban design changes increased pedestrian traffic in the Bourke Street Mall between 1993 and 2004, from 43,000 people per day to 81,000.<sup>180</sup> In addition, night-time pedestrian traffic increased 98 per cent between 1993 and 2004, reflecting the growth of bars and cafes and a safer, more welcoming environment.<sup>181</sup> This baseline continues to be monitored by the City of Melbourne through ongoing public space and public life surveys.

### CREATING THE BUSINESS CASE

Urban design can have a profound impact on the local economy of a city. The City of Melbourne's Walking plan 2014 demonstrated that if the walking connectivity within the Hoddle Grid was increased by 10 per cent, the value of the economy of the Hoddle Grid would be increased by up to \$2.1 billion a year, which is a 6.6 per cent increase in the value of the current economy.<sup>182</sup>

Equally, research into the cost of bad urban design by the New Zealand Ministry for the Environment in 2005 uncovered evidence that '[p]oor design ... is likely to have significant adverse environmental, social and even economic effects. The perpetuation of poor design can lower quality of life and limit employment opportunities. An example ... is low-density peripheral urban development with rigidly segregated land uses, and residential areas poorly connected to commercial activity and with poor internal connectivity. The literature is clear that the "external costs" generated by such development are significant. Essentially, much urban design is unsustainable.'<sup>183</sup>

## Benefits of good design

There is strong evidence that good design of public places offers many benefits, including:

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improved physical and mental health

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encouraging physical activity and recreation

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improved sense of wellbeing and happiness

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supporting cognitive development of children by encouraging play

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less car use

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improved biodiversity and provide habitats for birds, animals and insects

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improved air and stormwater quality

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cooling urban areas to mitigate the urban heat-island effect

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increased social capital and connectedness.

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## Impact of good design

### STREETS FOR PEOPLE

The street is a public space. Well-designed streets are full of movement, nature and recreation. Many streets are, however, dominated by transport, particularly cars. Streets with wider footpaths, trees and seating become mini public spaces. Making streets work as 'strips' of public space is particularly important where there are no squares or plazas within walking distance.

Street trees have multiple benefits – providing weather protection to people walking, mitigating stormwater loading and reducing the impacts of heat-island effect. Well-chosen tree species can bring light into streets in winter and provide shade and cooling in summer, while providing habitat for birds and wildlife. People naturally gravitate to shady trees when it is hot.

In a traditional city layout, streets often meet at public spaces, and squares and plazas help make cities legible and easier to navigate – they are the anchors of the city. Walkability is increased with both generous footpaths, and good destinations to get to – the ability to walk to local parks along tree-lined streets was linked to a five-year increase in life expectancy in a Tokyo study.<sup>185</sup> Designing streets to create a walkable network also means facilitating access to places people are likely to visit.

Good-quality public space will also encourage cycling. In Copenhagen, Denmark, a reduction in traffic movement led to a sixfold increase in high-quality public spaces in the city. The result was a variety of social, environmental and economic benefits, including a 65 per cent rise in bicycle use since 1970. Despite the relatively cold climate, there was an increase in the use of public spaces. This shows that if a city has good urban design with well-managed open spaces, people will use them.<sup>185</sup>

Good urban design focuses on public places where people like to be and will feel safe. Empty streets and spaces feel isolated, uncared for, and potentially risky or dangerous. In Perth, Western Australia, adults who had access to large, attractive, public open space were 50 per cent more likely to undertake high levels of walking.<sup>187</sup> Further research in the US has demonstrated that by doubling the accessible land-use mix within a 1 kilometre radius of a household, it quadrupled the walking activity for that household.<sup>188</sup>

Walking and cycling to school provides an important opportunity for children's physical activity and health. The urban design of the neighbourhood and the quality of the pedestrian environment in the area surrounding the school influences children's ability to walk or cycle. A study of 677 primary school students in Melbourne found that students were more likely to walk or cycle to school if their route was less than 800 metres. Factors such as a longer distance to school, the need to cross busy roads, and poor access to traffic lights and crossings had a negative effect on the ability to walk or cycle to school.<sup>189</sup>

# +5 YEARS LIFE EXPECTANCY

was linked to the ability to walk in local parks and along tree lined streets in a study of 3,100 older residents in Tokyo.<sup>184</sup>

### PUBLIC SQUARES

Well-designed and active public squares are the heart of a city, and provide focus for public events, celebrations, tourism and protests. However, a great public space works every day at every time of the day – not just when events occur. This requires activation, ideally from a combination of public buildings and busy commercial operations to make a space work successfully day and night. Public spaces do not have to be big, either, as people tend to group around the edges of a square.<sup>190</sup>

A good, well-designed public space includes a combination of factors to attract and keep people in the space. If the space is well-designed, studies show there will be an increase in public life.<sup>191</sup>

### SEATING

It has been shown that seating is an important ingredient for a successful public place.<sup>192</sup> If seating is configured in the right way, to allow for both group and individual use, it will be more likely to be used. Sitting occurs on benches and seats, but also on tables, edges, steps and on the ground, particularly grass – and this kind of use should be encouraged to allow people to find different ways to use their public space. Seats should not be just fixed – the use of movable furniture gives users a sense of ownership and ability to customise the environment.<sup>193</sup> Poorly considered seating that is not designed for people to sit and talk to each other is far less likely to be used, further discouraging other people from using the space.

### SHELTER AND SUNLIGHT

To enable public space to be used in all seasons, successful spaces often have different kinds of shelter. From constructed roof canopies or natural tree canopies, to the wind-breaking walls of surrounding buildings, providing weather protection from harsh sun, rain or wind, makes a public space more usable. These protecting elements can also help define a public space by giving it boundaries, which helps create a sense of enclosure. Good public space also enjoys good sunlight in winter, when direct sun is desirable. Generally, if the design of the public space allows for the different positions of the sun and different weather conditions, it is more likely to succeed.<sup>194</sup>





### ACTIVATION

It may seem contrary to the nature of public space, but private businesses help make public space better if handled well. Elements such as kiosks, cafes, bars, restaurants and busy retail premises bring people into spaces, or give them something to do when they get there. It is a balancing act – smaller commercial ventures are preferred, such as kiosks and smaller cafes, so they do not dominate. Seating for these should be located within a small section of the wider public space, but should be in addition to ‘free’ public seating. Generally, people like to watch other people.<sup>195</sup>

### SAFETY

Public squares and plazas, like all forms of public space, are safer when they have good visibility, with views into and around them. Typically, compact public spaces such as small parks or squares should have very good visibility to the street. Areas of public spaces that are not visible from the street, or are not looked into from surrounding buildings, are more at risk of crime, and do not feel safe. Active retail outlets provide security through observation, as does just having lots of people in a space. In contrast, vacant space that few people can observe attracts crime. When a vacant block adjacent to three low-rent apartment buildings and a school

was turned into a community garden, it led to a 56 per cent reduction in reported police incidents.<sup>197</sup> Good public space provides not only a good place to be, but also a place to look into from surrounding buildings. Good public spaces provide this visual amenity, and the more observation, the safer the space is for all.

# 56% LESS CRIME

when a vacant block was turned into a community garden.<sup>196</sup>

Project: Caulfield to Dandenong Open Space Corridor  
 Architect: Cox Architecture  
 Landscape Architect: Aspect Studios  
 Photographer: Peter Bennetts



### **PUBLIC BUILDINGS**

Public buildings often have some form of public space in front or around them – think of the State Library of Victoria in Melbourne as a great example. In this way, the edge of a public building is a threshold that leads to interior public spaces. These threshold spaces traditionally were often covered arcades or colonnades, spaces that provide aspect onto the wider public realm and form a transition with the interior.

Good contemporary public buildings are different to corporate and private buildings, and often gain their presence through public spaces in front of them and a direct openness into their interiors. These range from suburban libraries to major gallery buildings that define cultural precincts. All of these should be well designed to maximise their public benefit. Recent projects in Victoria such as the Geelong Library show that a well-designed public building can create a dramatic increase in public usage and engagement.

**EVERY DOLLAR  
INVESTED  
IN PUBLIC  
LIBRARIES  
GENERATES  
\$4.30 OF  
BENEFITS TO  
THE LOCAL  
COMMUNITY.** <sup>198</sup>





## PARKS

Parks have many benefits for visitors and also the wider environment of plants and animals. Parks generate health benefits and tourism.<sup>200</sup> There are two broad types of parks – large, more natural parks that capture and highlight native flora and fauna, and urban parks that sit within the density of our towns and cities. Parks act as the lungs of the city – literally helping us breathe better, and allowing for higher density living to be pleasant, based on the use of shared green space. In this way, urban parks are very efficient – they are highly utilised by different groups at different times. In comparison, private back gardens are used only on occasion. Good design in larger natural parks focuses on minimal design intervention – sensitive masterplanning provides subtle car and bus parking, well-considered paths and walkway structures, and a light touch to built elements that allows natural beauty to be the focus. Whether it is in the city park or a national park, access to green space is beneficial to all people’s health – and research shows that better-quality space is more highly utilised.<sup>201</sup>

Green spaces that provide opportunities for recreation, such as parks and sporting fields, allow people to be physically active. This helps to address public health by reducing obesity, lowering blood pressure and extending life spans. Research reported in *The Lancet* confirmed that access to green space is beneficial to people’s health, regardless of their economic circumstances, and that the quality of green space is directly related to how well it is used.<sup>202</sup> Research also suggests that park size is an important factor for

encouraging recreational walking. There is evidence that parks that are greater than 1.5 hectares in size are more likely to encourage recreational walking compared to smaller pocket parks.<sup>203</sup>

# \$200 MILLION IN AVOIDED HEALTHCARE COSTS

through physical activity  
in nature in Victoria’s parks.<sup>199</sup>

Project: *krakani lumi* – ‘resting place’  
in the *wukalina*/Mt William National Park, Tasmania  
Architect: Taylor and Hinds Architects  
Photographer: Adam Gibson





## PADDINGTON RESERVOIR GARDENS, PADDINGTON, SYDNEY

The Paddington Reservoir Gardens, a former water reservoir that served the growing population of Sydney, is now a public open space that embraces its history. Sydney City Council proposed a new park to replace the derelict subterranean infrastructure. However, the design team challenged the expectation that the site be capped, and the reservoir sealed below to enable a park to be built above. Instead, they convinced the council and community that the disused historic water chambers be preserved, and reimagined the site as a sunken garden that connects visitors with the past.

Project: Paddington Reservoir Gardens  
Architect: Tonkin Zulaikha Greer  
Landscape Architects: JMD Design  
Photographer: Brett Boardman



## PADDINGTON RESERVOIR GARDENS, PADDINGTON, SYDNEY

### Adaptive reuse of heritage

The reservoir was decommissioned in 1899, and became used as a storage facility and petrol station up until 1990. In the 1930s, a grassed park was built above the water chambers which were constructed below street level. In the 1990s, the roof collapsed and the site abandoned. By 2006, the structure was in a dangerous state of collapse and the reservoir was listed on the New South Wales Heritage Register. Through the transformation into a civic park, the design team was able to stabilise the existing fabric and structure as a 'ruin' and insert new functions that celebrated its history with public use. The project was conceived as a civic garden over three levels: a raised lawn on the roof of the intact eastern chamber, a sunken garden in the roofless western chamber, and a public park and small plaza on the northern street frontage between the reservoir and Town Hall. Ensuring public safety was a challenge, and the existing structure needed to be propped for reuse. Although the structure of the reservoir was never intended for human occupation, the site has been successfully transformed into a garden that is imbued with urban memory.

### Design and materials

Materials from the historic structure were retained and reused to conserve both the identity and embodied energy. The original reservoir was constructed of brick with ironbark columns, and cast-iron segmental arches that form the roof of the structure. The new elements are intentionally distinguishable, using a restricted palette of three materials (steel, aluminium and concrete) that complement the historic fabric. This acts as a connection between present and past, signalling entry and access across the site, and expressing the reservoir's form and function. The stabilisation of brickwork with pre-cast concrete elements shows a permanent melding of construction made from two different eras, forming the base for a new landscaped park to be built above. Two lightweight roofs, influenced by the shape of the brick vaults, float above the reservoir, indicating the main entries to the sunken garden.

### Public open space

The garden is designed to be a new active meeting place in the heart of the precinct, with the intention of providing a recreational space for exploration and play in the midst of civic activities. In transforming what was initially seen by the public as a 'dangerous eyesore', the design team was 'captivated by the possibilities of revealing the 19th century structures as a ruin through which members of the public could wander'. The result incorporates a sense of discovery into an exciting and welcoming public space that is embedded with history, texture and environmental qualities. Paths, ramps and lifts through the site are designed to enable access by people of all abilities.

### Landscape

The Paddington Reservoir Gardens has been carefully landscaped to convey a rich dialogue between nature and structure. This is achieved by dividing the park into 'rooms' that create intimate garden spaces of different environments, all of which complement the heritage elements of the site. These spaces also contrast with the vast open spaces that are often found in Sydney, providing a sheltered area of respite from the vibrant and noisy adjacent streets. The park uses a range of swamp species and formal exotic plantings to interpret historical landscapes that evoke the Victorian era of the reservoir's construction. The small pond in the sunken garden reflects the ruined fragments of the vaulted roof, serving a reminder of the reservoir's original purpose as a water storage facility. The design of the gardens is flexible and reversible, so that the site can be adapted over time without reducing its heritage significance. A water tank below the sandstone plaza captures water from the adjacent town hall to irrigate Paddington Reservoir Gardens.

Paddington Reserve Gardens has reinvigorated the Paddington civic precinct. The project successfully adapts and reuses a State Heritage structure that had been neglected for more than 16 years, creating a dedicated public space for a variety of activities. It is designed to be safe for all ages, with improved passive surveillance of the site, and it is accessible with carefully considered pedestrian links and walkways. The materials and details utilised in the construction are robust and built to last. The statement of significance by the New South Wales State Heritage Register states that 'long-standing community efforts to preserve the reservoir are a testament to the high level of regard in which it is held by the community'. Since its restoration into a civic park, Paddington Reservoir Gardens has had an important urban role in providing adequate open space adjacent to Paddington's civic precinct, which includes the Paddington Town Hall, Paddington Post Office and Juniper Hall.



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