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Inter-generational Parks : Design Guide for Physical Activity and Social Engagement Across Generations.

Queensland University of Technology, Brisbane, Qld.

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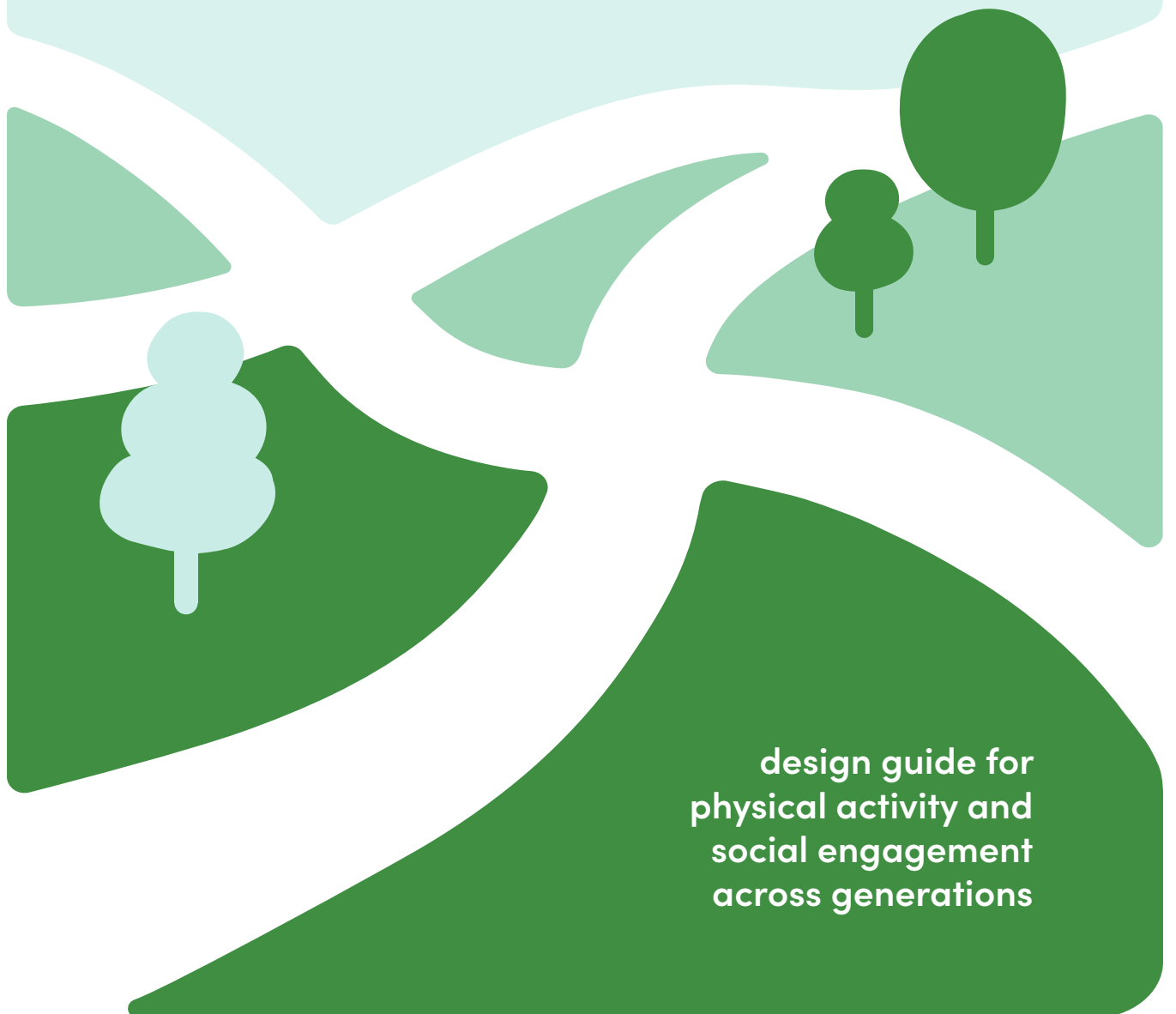
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inter- generational parks



design guide for
physical activity and
social engagement
across generations

While every care has been taken in preparing this publication, QUT and the project partners accept no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the findings were correct at the time of publishing.

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The empirical research described within this Design Guide was approved by Queensland University of Technology's Human Research Ethics Committee (Approval Nos. 1400000899 & 1700000436), and conducted in accordance with the procedures and ethical guidelines stipulated.

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the partners:



acknowledgement of the traditional owners and country

We acknowledge the
Yugara, Kabi Kabi,
Jinibara, and Turrbal
peoples whose lands
we all now share.



The Traditional Owners' unique values and ancient and enduring cultures deepen and enrich the life of our communities. Legacy issues resulting from colonisation are still experienced by Traditional Owners and First Nations people. We recognise our shared history and will continue to work in partnership to provide a foundation for building a shared future.

The data collection methods for this project occurred within Moreton Bay Regional Council in South East Queensland. QUT, Moreton Bay Regional Council, and the project partners respectfully acknowledge the Traditional Country across this region. We also acknowledge and pay our respects to the Kabi Kabi, Jinibara, and Turrbal Traditional Custodians, and their elders past, present, and emerging.



foreword

Public parks and recreation spaces are at the heart of our communities and live on in our memories long after childhood – but age shouldn't be a limitation to enjoying local playgrounds. The *Intergenerational Parks: Design Guide for Physical Activity and Social Engagement Across Generations* aims to evolve our thinking beyond play spaces for kids and teens. This *Guide* articulates how public spaces can be designed as focal community points that excite and engage everyone, regardless of age, ability, or cultural background.

This document is the culmination of more than three years' effort and collaboration between Moreton Bay Regional Council, QUT researchers, and other important industry stakeholders from Conrad Gargett, Playscape Creations, 7 Senses Foundation, the Heart Foundation of Australia, and the National Wellness Institute of Australia. The research team assessed and evaluated 12 key parks in the Moreton Bay Region to generate valuable evidence about park usage and community preferences. The *Guide* outlines innovative design principles for intergenerational parks and recommends good practices to improve park features that can be used by local governments and park designers across Australia.

The COVID-19 pandemic has made the role of parks and outdoor spaces even more crucial. Now more than ever, families

need welcoming, safe and interesting places to come together and play. These public spaces provide valuable and unique opportunities for physical activity and meaningful interactions between adults and children. Spending time outdoors allows children to experience nature, make new friends, and develop the skills they need for life. These intergenerational interactions can also provide adults with deeper insights into their child's abilities and help them better understand their child's needs.

Well-designed local parks encourage people of all ages to be physically active, and can also enhance community harmony. That's why it's important that public park design uses an intergenerational approach, ensuring individuals of all ages can find something to enjoy.

It's no small feat to design public parks that address the needs of everyone in the community. By partnering with academia and industry to research and implement best practice design and planning strategies, Council will remain a leader in providing contemporary open spaces. We can create a one-of-a-kind experience so that each park will become a magnet for the community and an inspiring space to gather, that everyone will want to visit again and again.

- MBRC Mayor Peter Flannery



executive summary

The World Health Organization (WHO) considers a healthy city as one that continually creates and improves physical and social environments and expands community resources to enable people to mutually support each other (WHO, 1998). As key components of a healthy city, neighbourhood and community parks are critical environments that have the potential to support all ages in physical activity and social engagement. Yet, far too often, parks within suburban areas are non-stimulating, and lack challenging and appealing equipment for all ages (Veitch et al. 2006). In many cases, park visitors are sedentary, and adults are present to supervise children's activities rather than engage in moderate to vigorous activity themselves (Cohen et al., 2007).

The *Intergenerational Parks: Design Guide for Physical Activity and Social Engagement Across Generations* aims to change this. We envision suburban parks as well-designed public spaces that attract and inspire all ages to be physically active, while enabling social connections among and across generations. To achieve this, we must recognise and design for diverse user needs and motivations.

This *Guide* integrates multiple areas of expertise, linking theories and methods from landscape architecture, environmental psychology, and human movement within a holistic, salutogenic (health promoting) approach to inspire designers, researchers, and policymakers to challenge the status-quo and design parks that will:

1. entice all ages
2. enable physical activity
3. engage people socially

These three actions are critical, since we first need to attract people to use the parks, and once they are there, we need to enable them to be active and engaged.

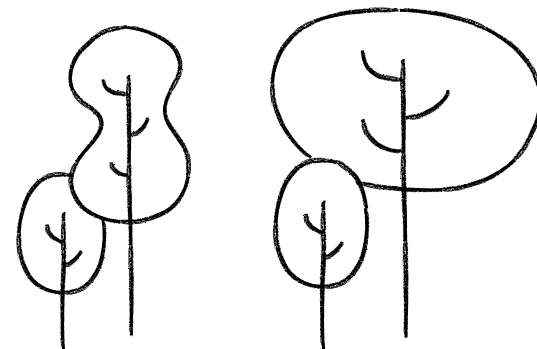
Evidence-based strategies are critical to ensure the parks created are effective and contribute to the community.

The ideas and recommendations presented in this Guide are based on a multi-year research project conducted in the Moreton Bay Region. The reserach team used both quantitative and qualitative methods to understand what will entice people of all ages to parks, how they use park spaces once there, and if they are able to be physically active and socially engaged in the parks. The data were collected and analysed over a two-year period to develop research findings and subsequent recommendations. Based on our analysis, we divided these guidelines into six key park areas, listed in order of relative importance:

- pathways
- playgrounds
- open playing fields
- dog exercise areas
- outdoor exercise areas
- other activity areas, including basketball courts and community gardens.

A key research finding that informed this Guide is the importance of walking paths and trails within parks.

This seemingly simple design feature is critical for attracting people to parks to be active. Well-designed pathways have enormous potential to improve the use of parks, accommodating activities from strolling to skateboarding to cycling. Pathways also encourage exploration of the entire park, help navigation with wayfinding cues, and provide opportunities for learning and engaging. If designed appropriately, they afford opportunities for intergenerational activities, as many adults use them with their children or grandchildren.



Our research strongly suggests that park designers need to be more purposeful about affording opportunities for intergenerational physical activity.

We cannot assume that intergenerational activities will just happen. For example, playgrounds are the top feature to attract adults accompanying children to parks, and adults indicate that there are good opportunities to assist or teach children in these areas. However, our observational findings show that this is not yet happening widely and few adults are active themselves within the playgrounds. Therefore, we need to improve the design of these spaces to encourage adults to be active *with* their children, rather than simply watch their children being active.

Our findings confirm the importance of natural environments, wildlife habitat, and views within parks.

Adults overwhelmingly indicated that scenes of nature would entice them to a park to be active. Exploring and learning about native plants and animals is something that children and adults can do together, while also being active. Therefore, preserving/restoring existing natural areas, or introducing new plantings as new parks are built, will help create parks that are inviting.

Playgrounds can effectively entice adults with children to a park, and enable the children to be active, while adults often observe, teach, and play with young children.

Playground equipment enables young children to run, jump, and climb, which are important movements for their development. However, the affordances for adults to be active in playgrounds were less clear. Although they can do movements such as pushing and lifting when assisting young children, they were often less active when at the parks with older children. Therefore, it is important that playgrounds are designed for children and caregivers to be active on, around, and in-between all of the play equipment. In addition, creative uses for other design features such as walls and fences, can give adults freedom to be active without prescribing their movements on playground equipment built for small children.

We suggest that parks need to be designed for use at all times of day, accommodating different use patterns and weather.

Our reserach found that physical activity levels were highest during the early morning periods. During that time almost three-quarters of park users were moderately to vigorously active. Yet, more people in total were observed in the parks in the afternoons. This is often the time when children finish school and caregivers take them to a park to play. To enable more people to be active once they are already in a park, spaces should be designed to accommodate afternoon heat and use patterns. Providing shade over the playgrounds and walking paths can help overcome barriers and enable users to be more active.

This *Guide* includes checklists of important questions to provoke reflection and critical thinking about the design of parks.

The checklist questions are based on the key recommendations for each area of the park. The recommendations are evidence-based, using both the findings from our reserach as well as supporting evidence from other studies. The questions can be used during the design of a new park or conducting a post-occupancy evaluation on a built park.

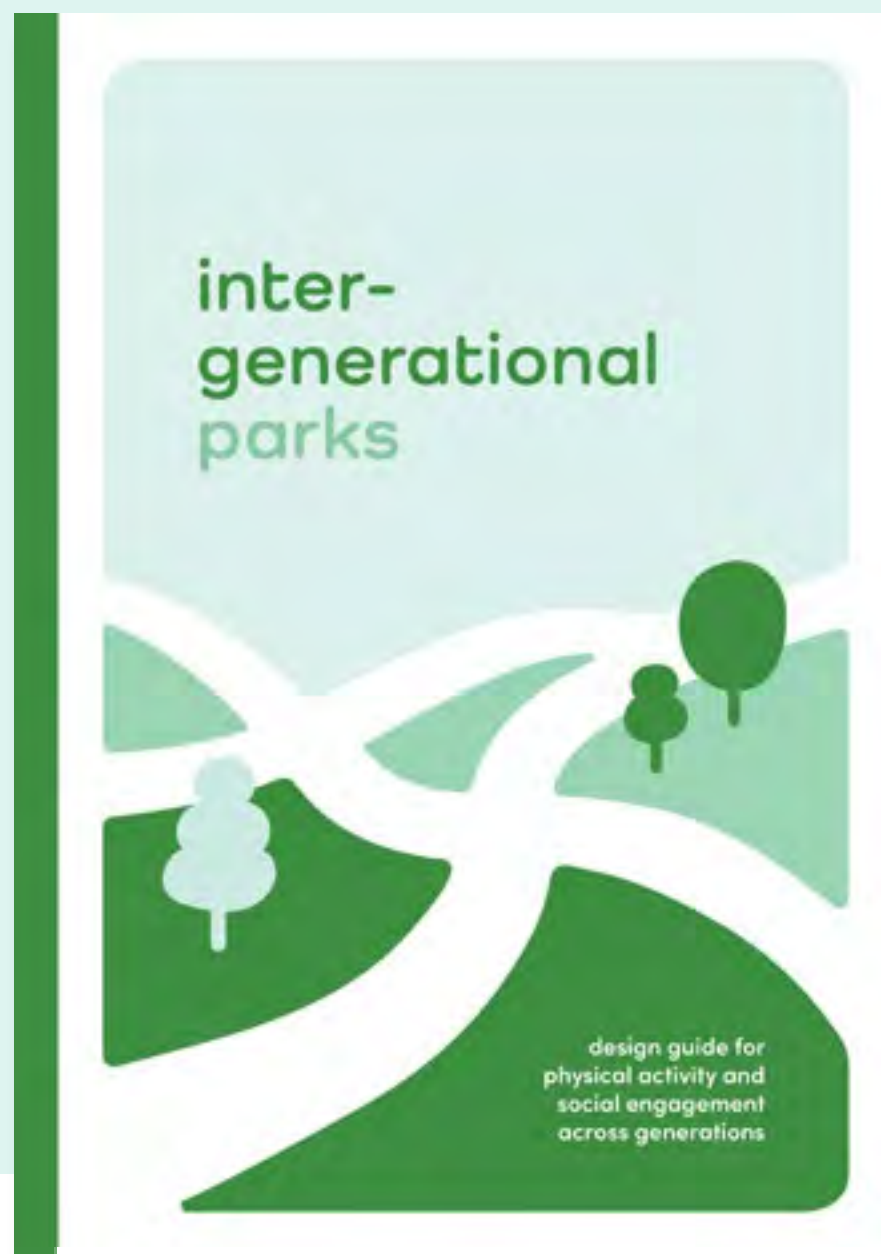
Translation of the recommendations into design solutions in the built environment is critical if we want to have an impact on how people use parks for physical activity and social engagement.

The checklists are followed by design ideas to inspire creativity and innovation when designing parks. This *Guide* is not intended to include all facets of park design, but instead focus on the very important task of encouraging more people to use parks for physical activity and social engagement. We feel this is imperative right now to ensure parks continue to be valuable community infrastructure that contribute to a healthy city for all.

how to use this guide

The evidence-based suggestions published in this *Design Guide* identifies how to create opportunities for intergenerational physical activity and how to engage people socially within neighbourhood parks. The document is designed to help you achieve designs that will entice, enable, and engage a variety of age groups and is broken down into three main sections (see page 9).

You may only be interested in certain sections of the *Guide*, and it is not necessary to read it cover-to-cover to gain an understanding of how to best design specific areas within a neighbourhood park. So feel free to engage with the document in a way that best serves your needs.



section 1

Introduction & Background

This section includes the purpose, vision, aims, objectives, definitions, an overview of the research program, and methodologies and applied theory.

section 2

Findings & Recommendations

These are organised by the different sections of a park; including pathways, playgrounds, open playing fields, dog off-leash areas, outdoor exercise areas, and other activity areas. For each area there is a synopsis of the research findings and recommendations. The findings include notations (i.e., data sources 1-4) that link to the methods and overall research design.



section 3

Checklist & Design Ideas

The Checklists allow you to determine if you are best meeting specific criteria for each of the park areas as evidenced by the findings reported in section 2. Further, Design Ideas are shared from a workshop in which stakeholders examined the evidence from the research and explored ideas to creatively implement the recommendations. The workshop focused on opportunities for fostering physical activity and intergenerational interaction with a focus on fun, adventure, and excitement, while catering to differences in abilities and preferences.



section 4

Appendix

The document concludes with further details about the research program, including the research design, methodology, and data collection tools and survey instruments.



1

introduction + background

- | | |
|----------------------|-------------------------------------|
| 14 purpose | 19 definitions |
| 15 vision | 20 research program overview |
| 16 objectives | 22 background information |
| 18 aims | |

findings + recommendations

- | | |
|------------------------|----------------------------------|
| 30 key findings | 58 open playing fields |
| 32 pathways | 68 dog off-leash areas |
| 46 playgrounds | 78 outdoor exercise areas |
| | 88 other activity areas |

3

checklist + design ideas

- | | |
|--------------------------------|-----------------------------------|
| 102 pathways | 116 dog off-leash areas |
| 106 playgrounds | 120 outdoor exercise areas |
| 112 open playing fields | 126 other activity areas |

appendix

- | |
|-------------------------------------|
| 130 references |
| 134 photo attributions |
| 136 research program details |

contents

2



1 introduction + background

14 purpose

15 vision

16 objectives

18 aims

19 definitions

20 research program overview

22 background information

purpose

This *Design Guide* provides parks-based research evidence, design recommendations, and strategies for park designers and planners to determine the most effective design elements to increase physical activity and social interaction. The *Guide* will also inform government agencies responsible for guiding strategic decisions, providing the evidence for future park environment initiatives. In addition, all people involved in planning, designing, and re-envisioning community and neighbourhood parks can draw value from this *Guide*.

Guide design decisions

Advocate for good design

Identify opportunities to reinvent parks

Understand the ingredients of good design for intergenerational physical activity

we believe that parks:

When designed well, encourage intergenerational physical activity and social engagement

Can provide spaces for people to socially engage with others

Can offer opportunities for physical activity for ALL generations

Are for everyone

vision



objectives

We have three main objectives for the use of this *Design Guide*, which were considered in ascending order to inform the strategic design of neighbourhood public parks to encourage intergenerational physical activity and social connection:

entice all ages

Attract and encourage all ages to use parks in their community.

enable physical activity

Encourage all park users to be active.

engage people socially

Afford activities that encourage park visitors to socially connect with others.

entice

Determine the main attractors to parks for an array of visitors (ages and ability levels) .

For example, park characteristics and elements that attract an older adult may vary greatly from those that attract families and children. Ensuring parks are appealing to all age groups is vital to encourage intergenerational group visitation and use.

enable

Identify the physical or natural elements, as well as park characteristics that afford physical activity.

Parks typically include a range of physical and natural elements, however, uptake of physical activity in parks is more complex than the simple inclusion of elements. For example, installation of outdoor exercise equipment that is perceived to be complex or not placed appropriately within the park may have limited use. Whereas, wide and smooth concrete pathways set amongst native vegetation is a stated preference for visiting parks and where many people say they would most likely be physically active.

engage

Facilitate intergenerational park use, rather than silos of unigenerational spaces, identifying opportunities for multi-generational or joint participation.

Opportunities for social engagement while one person within a group is physically active can be identified. However, the ultimate goal is for social connection to occur while all people are physically active.

aims

The aim is to provide evidence-based recommendations for planning, designing, and refurbishing parks that will foster and encourage intergenerational physical activity and social connection.

We are focusing on the design of parks and their physical elements, thus what entices or attracts people to parks more so than the barriers that prevent them from attending, such as lack of time due to work commitments.

This *Guide* is *not* intended to offer mandatory standards for the provision of park elements. The intention is to present a reference tool based on research evidence to assist designers and planners to incorporate design elements that offer and encourage intergenerational physical activity and social connection opportunities.



definitions

<p>park</p> <p>green space that provides social and recreational opportunities for communities</p>	<p>physical activity</p> <p>bodily movement produced by skeletal muscles that require energy expenditure</p>	<p>inter-generational</p> <p>simultaneous involvement of people from differing age generations</p>
<p>social engagement</p> <p>active participation or involvement in the same activity, including playing the same game</p>	<p>social interaction</p> <p>reciprocal responses between two or more people during an activity that can help develop and/or promote social relationships</p>	<p>social connection</p> <p>feeling of belonging to a group or being close to others, which relates to people's social relationships</p>
<p>green space</p> <p>an area of grass, trees or vegetation set apart for recreational or aesthetic purposes</p>	<p>blue space</p> <p>an area dominated by surface waterbodies or watercourses, such as waterfronts, lakes, and streams</p>	<p>open playing field</p> <p>an open grass-covered field within a park that may be lined for specific sports or left unmarked for informal play options</p>

research program overview

This *Design Guide* is part of a larger project that identified behaviours and preferences of park visitors and people from the greater community.

The transdisciplinary QUT team representing landscape architecture, urban planning, physical activity and health, and gerontology, has significant experience working with children and ageing adults. The partners on the project were Moreton Bay Regional Council, Playscape Creations, 7 Senses Foundation, Conrad Gargett, National Heart Foundation of Australia, and National Wellness Institute of Australia. These key industry stakeholders include playground designers, Landscape Architects and physical activity advocates, and brought a broad range of knowledge and expertise to this exciting project.

This project focused on identifying how park visitors use parks for physical activity and social engagement, and identifying ways in which parks can be designed to further promote these uses. Many park design considerations, such as regulations, topography, and drainage, were beyond the scope of the project.

methods

The research team purposefully chose 12 Moreton Bay Regional Council parks and surveyed park visitors about what drew them there and which park amenities and features they used for physical recreation (data source 1) and observed park usage with systematic behaviour observations (SOPARC) (data source 2). The researchers also observed and inquired about intergenerational interactions that occurred within the park.

phase 1



phase 2



The researchers conducted short interviews (data source 3) and facilitated a photo elicitation tool (Photo-Choice Tool) with community members at local shopping centres (data source 4). The interview items identified physical activity preferences, barriers to park use, and current park use. Thirty-two photos of a variety of park scenes were included within the photo tool to help understand community members' park preferences and perceptions of physical activity affordances within their selected scenes.

phase 3

Design workshops were undertaken with the whole research project team and some external parties to discuss the findings from Phases 1 and 2 and their potential application to the design of parks, as well as how the information could be incorporated into this *Guide*. The research findings from all phases formed the basis of the park design recommendations for drawing existing park visitors and people from the community to parks for physical activity and intergenerational interactions.



background information

The following sections provide a brief overview of the suburban context in which this research takes place and the key theories and concepts that formed the basis of this project.

The suburban context
p. 23

The importance of physical activity
p. 24

The value of intergenerational interaction
p. 25

Affordance theory
p. 26

Salutogenic design
p. 27

the suburban context

The research conducted for this project focused on suburban parks as key spaces for design innovation and improvement. Parks within suburban communities are used primarily by the local residents. A US study found that people almost exclusively use their local neighbourhood park, with 81% of park users living within one mile of the parks observed (Cohen et al., 2006). However, as opposed to large, well-resourced master-planned parks developed for regional use or within major cities, suburban neighbourhood parks are often under-designed. In addition, car-oriented suburban communities often contain barriers to active travel and physical activity, impeding physical activity engagement in the community, especially for older people (Zeitler et al., 2012). For example, people living in sprawling suburbs were likely to walk less during leisure time and weigh more than those living in compact communities (Ewing et al., 2003).

Moreton Bay Regional Council (MBRC) is one of the fastest growing regions in Australia and represents a prime area to study the impact of parks on health and well-being. The Council is comprised of diverse landscapes and maintains over 1,700 urban, suburban, and regional parks, covering approximately 3,900 hectares. The region is home to 417,000 people, with 23.4% youth (compared to 21.6% in QLD) and 13.0% seniors (compared to 13.1% in QLD) (ABS, 2013). The Council has a strong commitment to community well-being, active kids, and intergenerational social engagement opportunities. Yet, MBRC also has some common concerns similar to those experienced across Australia, such as high rates of inactivity and increasing risks to physical health and mental well-being.

Nearly 90% of Australians live in urbanised areas, with most of those living in suburban communities outside of a CBD

(ABS, 2013)

55% of Australian adults
and 70% of children aged
2-17 years do not meet the
physical activity guidelines

(AIHW, 2018)

the importance of physical activity

Despite the extensively publicised health benefits of physical activity, the majority of people in Australia and across the world are physically inactive. The World Health Organization (WHO) has recently updated their global recommendations on physical activity and sedentary behaviour (2020). The WHO physical activity guidelines also provide the first formal recommendation on countering the health harms associated with excessive sitting, by suggesting people aim to exceed the weekly recommended physical activity levels (see below). The WHO guidelines reflect growing scientific evidence linking sedentary time to serious health problems and a heightened risk of early death.

The WHO guidelines are a crucial leap forward when compared to the WHO's 2010 global recommendations on physical activity for health. The biggest change is the idea that any amount of physical activity is better than none, even when the recommended thresholds are not met. This is a positive message as many people do not meet the advised minimum, especially those with chronic illness, health conditions, and comorbidities.

The primary message of “all physical activity counts” is encouraged by the withdrawal of the previous 2010 requirement for physical activity to be in bouts of at least 10 minutes in order to obtain health benefits. This now allows for more occasions to accumulate the recommended levels:

- Adults: 150–300 minutes of moderate-intensity aerobic physical activity or 75–150 minutes of vigorous-intensity aerobic physical activity or an equivalent combination through the week.
- Children (aged 5 to 17): an average of one hour a day of moderate to vigorous physical activity through brief episodes (e.g., lasting 1–5 minutes) of intermittent activities (e.g., incidental physical activity).

The WHO also recommends “multicomponent exercise” (exercise that incorporates functional balance training and muscle-strengthening concurrently). These actions and movements can be accomplished through activities such as community gardening (lifting and ambulating with light to medium weight objects), walking on different grades or slopes, and assisting children with balance and climbing. These recommendations are being targeted at all older adults, rather than only those with poor mobility as per the 2010 recommendations, which reflects the scientific evidence that multicomponent exercise is critical for the prevention of falls and improving overall function in all older adults.

Intergenerational interactions involve people from multiple generations, sharing knowledge and skills through cooperation, assistance, and exchange. These interactions can have many positive benefits for health and wellbeing. It is important to differentiate between intergenerational, which represents different generations interacting with each other, and multi-generational, which simply refers to more than one generation. This is an important consideration for park design as intergenerational spaces can afford opportunities for different ages to interact and engage within the same space, rather than simply be present at the same time.

In this *Design Guide* we focus on an asset-oriented approach that recognises and values the contribution that people of different ages bring to social situations and community life. There has been more focus on intergenerational interactions in response to the social isolation and segregation that often occurs in suburban communities (Kaplan et al, 2004). Well-designed public spaces can support social cohesion and opportunities and inspiration for meaningful engagement between generations (Kaplan and Haider, 2015). It is also important that intergenerational spaces ‘enhance social and emotional understanding between age groups, increase harmony and reduce generational conflict’ (Biggs & Carr, 2015, p.10) as research has shown that intergenerational exchange fosters the development of social capital (MacCullum et al., 2010). In addition, policy makers in many countries are giving renewed attention to intergenerational practices to counteract common negative perceptions of aging and to overcome the physical and social segregation of generations (Jarrott, 2011; Hatton-Yeo, 2010).

Intergenerational interaction can also promote and enable being active, as social support through intergenerational groups can motivate people to be more active (Kaplan et al, 2017a), especially through the COVID-19 pandemic. Physical activity is often learned and fostered within tight-knit social groups, and within the context of families, neighbourhood, and communities (Kaplan et al, 2017a). However, parents and caregivers can have both positive and negative impacts on children's physical activity levels. Significant variations in energy levels, attention spans, and tolerance of noise, among others, are all considerations that present challenges for park design when the goal is to entice two or more user groups at the same time. Therefore, it is important to understand the motivations and barriers that each group faces and how we can more effectively enable intergenerational physical activity in parks. The benefits of intergenerational interactions are promising as a way to promote healthy communities for all ages, yet this is an emerging area of research that is still developing (Cushing & van Vliet, 2016).

the value of intergenerational interaction

“It turns out that people who are more
socially connected to family, to friends,
to community are happier, they're
physically healthier and they live longer.”

(Robert Waldinger, Director of the
Harvard Study of Adult Development)

affordance theory

Affordances are environmental interactions through which a person understands possibilities for action offered by the environment, often determined by the substances, surfaces, objects, and other living things within a space (Gibson, 1979). Environmental features or spaces are often experienced with respect to their function and how we interact with them (Heft 1989). Understanding affordances helps determine how the environment can be designed or manipulated to support or discourage various activities and experiences (Ward Thompson, 2013). These experiences and perceived affordances depend on the characteristics of an individual (Heft, 2010). Yet, affordances do not cause behaviour, but rather constrain it or create a possibility for it (Heft, 1989). In addition, affordances that are designed into parks also interact with other factors such as programmed activities, and cultural norms.

Affordances must include cues that park visitors can understand and interpret. For example, a turf grass lawn area could be easily walked on, but without a designated pathway as a cue, people using the space might not recognise that affordance. In addition, all park visitors may not be able to take advantage of affordances. For example, a person with an impediment or mobility challenge might not be able to walk on turf grass or may be very hesitant to do so since it can be uneven. Similarly, if the turf grass area is treated with herbicides or chemical fertilizers, it may not be safe for a young child or pets to walk across the area in case they inhale or ingest some of the chemicals. It is therefore important that affordances are designed to provide opportunities, as well as communicate those opportunities to park visitors.

"The affordances of a given place in the environment establish for an individual what actions are possible there and what the consequences of those actions are. For example, a surface at approximately knee height to the individual affords sitting on."

(Harry Heft, 1989)

"A 'salutogenic' approach is one that focuses on factors that support health and wellbeing, beyond a more traditional, 'pathogenic' focus on risk and problems."

(Dementia Training Australia)

salutogenic design

Salutogenic design aligns with place-making efforts to encourage vitality and functionality, resulting in spaces that are innovative, supportive and exciting, rather than degrading or stigmatizing. The theory of salutogenesis, which translates as 'health origins' (Antonovsky, 1996; Mazuch, 2017) considers a person as a complex human being, without identifying them by their pathology, disability or particular characteristics. Salutogenic design uses a systems-thinking approach to view people within a context, recognizing that the two are interconnected (Eriksson, 2017). Salutogenic environments promote health and well-being, creating a sense of coherence to enhance an individual's ability to comprehend, manage and cope within an environment (Antonovsky, 1996). The focus is often on affording daily opportunities for physical activity, access to nature, clean air, safe places, and social support. Affording these lifestyle choices from the outset can help address and possibly prevent issues such as obesity, dementia, mental health issues, and other such health problems. It is the role of a designer to not only address a problem or issue through a creative solution, but also to find ways to mitigate and prevent problems for the future.

Since suburban parks are often under-designed and rarely incorporate innovative and exciting design features, there is an urgent need to challenge average or sub-par design solutions that result in sedentary activities and low levels of engagement. We have created this evidence-based *Design Guide* to encourage the delivery of salutogenic parks that better meet the preferences and needs of a wide range of park visitors, and are proactive in the pursuit of health and wellbeing for all ages.



2 findings + recommendations

- 30 key findings
- 32 pathways
- 46 playgrounds
- 58 open playing fields
- 68 dog off-leash areas
- 78 outdoor exercise areas
- 88 other activity areas

key findings

01

Well-designed pathways are critical in parks.

- A pathway was the most appealing park element chosen by adults to entice them to a park to be active, including older adults.
- Walking was the most popular activity undertaken on pathways, but pathways also enable people to jog, cycle, scooter, and undertake other “wheeled” activities; therefore, pathways afford many options for physical activity, including moderate to vigorous physical activity.
- Of the large number of people using pathways for walking, many were walking while socially engaging with others.
- Pathways enable adults to walk or engage in other activities with children, such as cycling and scootering.

02

Playgrounds are a drawcard, but they need to be designed to provide adults with the option to be active too.

- Playgrounds were the greatest attractor to a park for adults with children.
- Playground equipment, as well as the general playground area, provides opportunities for children to be active through climbing, swinging, jumping, and running. The opportunities for adults to be active in playgrounds are less clear.
- Children have opportunities to socially engage at playgrounds with their caregivers and other children, and the level of engagement is often determined by the children’s wishes.
- Whilst children are playing on the playground, adults typically observe, teach, and play with their children. Adults with younger children interact with their children more often than those with older children.

03

Scenes of nature can effectively encourage physical activity in parks.

- Scenes of nature were described as one of the most preferred park features that would encourage people to be physically active. In conjunction with a variety of materials, such as boardwalks, compacted crushed gravel, and exposed rock, pathways immersed within nature or with a natural view were most appealing.
- Walking in a natural environment provided calming sensations and the feeling of “getting away from everyday life” for many.
- A variety of natural scenes and views were appealing, ranging from creeks, to rivers to rainforests.

04

Open playing fields can be valuable, but often need more cues about possible activities.

- Open playing fields were not a big attractor to parks. However, they provide opportunities for running, ball sports, and activities requiring a large space. They were identified as the third most popular area for physical activity by park visitors (after pathways and playgrounds).
- Males were more likely than females to be attracted to open playing fields in parks.
- Many activities undertaken within open playing fields are group or partner activities, such as kicking a football, highlighting the potential for social engagement. However many of these activities require the users to bring their own equipment, and as such the affordances need to be clear and equipment readily available.
- Open playing fields within parks are valuable spaces that allow adults to teach children skills, such as throwing and catching, particularly for those who may not have the space in their backyards.

05

Intergenerational interactions do not automatically happen, so opportunities need to be afforded within parks to enable multiple generations to be active together.

- More children were observed in small parks, while more adults were observed in large parks, and older adults were more often observed in mid-sized parks.
- Only 19% of park visitors were engaged in intergenerational interactions, with fewer than 6% co-participating in active recreation or play.
- Intergenerational activities will not likely happen unless park design affords a greater number of opportunities for interactions across generations.

06

More people were present in the parks in the early afternoon, but a higher percentage of park visitors were physically active in the morning.

- Physical activity levels were highest in parks during the early morning periods, with greater than 70% of park visitors engaging in moderate to vigorous activity.
- More people were observed in the parks in the afternoons, so there is an opportunity to encourage more people to increase their activity levels during that time, when they are already in the park.

pathways

"I think it's just a nice, scenic space. If you just look at the water, nice breeze coming through while you're running."

- Female, 18-24 years, Mango Hill



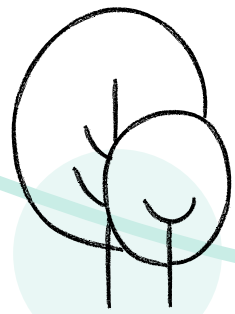
Why are pathways important design elements within parks for physical activity?

Pathways afford a wide variety of activities for all ages and ability levels, particularly walking. Pathways also connect key elements within the park and add cohesiveness to the overall design. They provide wayfinding signals and can communicate a hierarchy of use, leading people to both primary and secondary areas.

PATHWAYS

our
research
shows...

Intergenerational parks



nature

Pathways immersed within nature or with a natural view were the most desired park scenes to get people to the park to be active.

walking

65% of adults currently walk for physical activity, which is more than any other type of activity.



learning to ride

Adults use pathways at the park to teach children how to ride bikes.



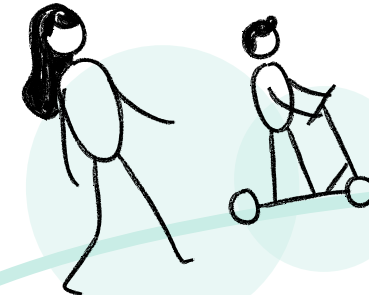
higher intensity activities

Pathways allow for higher intensity activities such as jogging, cycling, and running.



skating, blading and skateboarding

Pathways provide opportunities to learn and practice how to roller skate, roller blade, and skateboard; activities that are appealing for children, teenagers, and young adults.



intergenerational activities

Some adults like to walk on pathways whilst their children ride bikes or scooters at the park. This is one example of intergenerational physical activity.

DESIGN GUIDE

PATHWAYS

recommendations

<div>01</div> <div>surface</div> <div>Provide a path surface that allows walking and cycling in a safe manner without tripping concerns, and that appeals to a wide range of users.</div>	<div>02</div> <div>natural environment</div> <div>Create a pathway immersed within a natural environment that allows elements of nature to be experienced.</div>	<div>03</div> <div>shade</div> <div>Create shade along a pathway to increase comfort, regulate air and surface temperatures, provide protection from the UV radiation and solar glare, and increase the potential hours of use.</div>
<div>04</div> <div>length</div> <div>Consider the length of a pathway to provide changing vistas and maintain interest to encourage park visitors to use the pathway for longer durations.</div>	<div>05</div> <div>width</div> <div>Provide pathways at least 2.5m wide to allow and encourage multiple people with varying mobility levels to participate in a variety of physical activity types.</div>	<div>06</div> <div>lighting</div> <div>Provide lighting along pathways at appropriate intervals to allow sufficient light to safely utilise pathways for recreational physical activity or for commuting outside of daylight hours.</div>
<div>07</div> <div>seating and water fountains</div> <div>Provide seating and water fountains along pathways that allow park users to rest when needed and rehydrate to ensure they feel comfortable visiting the park.</div>	<div>08</div> <div>views of wildlife</div> <div>Design pathways adjacent to natural wildlife habitats to allow views of fauna and interesting elements.</div>	<div>09</div> <div>physical challenge</div> <div>Incorporate stairs along a pathway to provide an optional physical challenge, if the park context and topography allow for it.</div>



surface

Provide a path surface that allows walking and cycling in a safe manner without tripping concerns, and that appeals to a wide range of users.

entice & enable

Concrete pathways appeal to a variety of users because of their smooth surface (4). In particular, older adults value smooth pathways because of the reduced chances of tripping (1; 4), which is consistent with previous research (e.g., Rosenberg et al., 2012; Zhai & Baran, 2017). Pathway surfaces designed to fit within the surrounding environment often appeal to people drawn to those spaces (e.g. a wooden boardwalk adjacent to a lake or a compacted gravel path through a rainforest) (4).

engage

Adults and children can use pathways at the same time for recreation and physical activity. For example, adults often walk on pathways whilst children ride bikes or scooters (1). Providing a pathway that affords opportunities for adults to walk alongside children on scooters or bikes can result in varying levels of intensity of physical activity among intergenerational groups. Similarly, if older adults' concerns about losing their footing or balance are addressed, then they are more likely to join others to walk at the park. Pathways within parks are also used by adults to teach children how to ride a bike or other wheeled items, which is an opportunity for social engagement (1).

natural environment

Create a pathway immersed within a natural environment that allows elements of nature to be experienced.

02

entice & enable

Shade along pathways can entice people to a park and create more opportunities throughout the day, particularly in warmer climates (1). Shade from mature trees provides a cooling sensation whilst utilising pathways, which is particularly appealing during warmer months (1; 4). Shade can also reduce sun exposure, which is of particular concern for many, including adults with young children, and older adults (Zhai & Baran, 2017).

engage

Groups of older adults may prefer to use pathways during the middle part of the day when the pathways are quieter and concerns about being passed by cyclists are reduced (i.e., fewer commuters and school age children). Providing shade cover may allow these groups of users to use pathways during the middle part of the day when there is greater sun exposure and temperatures are higher. If sun exposure is reduced and the temperature is more pleasant, people may stay longer and potentially be more active. Shade cover is valuable during warmer months in climates similar to SE Qld, as it is still hot straight after school, and to allow effective utilisation of the pathways. Providing greater opportunities for school-age children to play at the park in the afternoon allows for different physical activity opportunities and ways of socially interacting compared to indoor activities at home.

entice & enable

Pathways afford opportunities to move through natural environments and there are a range of natural elements that entice people to use pathways in parks. Preferred park scenes include a boardwalk alongside a water element, a paved and well-lit pathway surrounded by green grass and trees, and a natural rainforest trail with stairs (4). Compared to urban spaces, natural landscapes are often preferred and believed to be more restorative (Menatti et al., 2019; Twedt, Rainey, & Proffitt, 2019), and more relaxing (Grassini et al., 2019). Natural landscapes are often described as restorative when they evoke a sense of “getting away” from everyday life settings (Kaplan & Kaplan, 1989). Scenes of nature can encourage people to be physically active, for example enticing them to walk a little faster or further to see what the next vista holds (4).

engage

Adults and older adults walking together along a pathway immersed in nature have the opportunity to talk and connect with one another through sharing this time in a natural environment away from other distractions (1; 4). Providing opportunities for adults and children to engage with each other whilst in nature can be a valuable experience that fosters social connections. This is achieved through shared experiences, teaching and learning, and shared enjoyment and fascination with nature’s offerings (e.g., finding a bird’s nest with eggs inside).

03

shade

Create shade along a pathway to increase comfort, regulate air and surface temperatures, provide protection from UV radiation and solar glare, and increase the potential hours of use.



length

Consider the length of a pathway to provide changing vistas and maintain interest to encourage park visitors to use the pathway for longer durations.

04



entice & enable

Long pathways (e.g., within a pathway network or walking loop) can be a great appeal for those wishing to walk, run or cycle in a park (1; 4). A long pathway could entice someone to go a little further to finish the loop or reach the end of the pathway. The ever-changing natural scenery surrounding a pathway provides an interesting experience and encourages people to be active for longer (1; 4). Previous research with older adults has identified park length as an important consideration (Zhai & Baran, 2017).

engage

Changing vistas can encourage social engagement by providing excitement and intrigue along pathways. As children are drawn to exciting and intriguing nature experiences, and adults could also have more connection with nature in their lives, this could provide a positive shared experience. Long pathways that inspire groups of people to use them for longer may lead to longer periods of social engagement between members of the group.

entice & enable

Many people appreciate wide pathways that allow other users (e.g., cyclists or runners) to pass by at a safe distance reducing the chances of being startled or having an accident (1; 4). This includes older adults with mobility issues or those accompanying people on mobility scooters, as well as parents accompanying children on bikes and scooters.

engage

Ensuring the appropriate width allows for larger groups to safely use the pathways, and still interact with one another. The pathway width is also important for groups with people in wheelchairs, with assisted-walkers, as well as children learning to ride bicycles and scooters that may have difficulty staying to one side, but who want to remain included.



05

width

Provide pathways at least 2.5m wide to enable and encourage multiple people with varying mobility levels to participate in a variety of physical activity types.

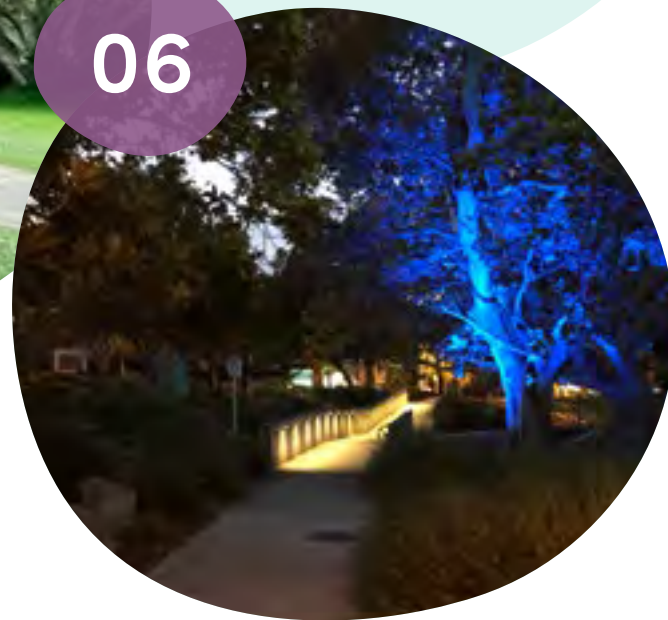




lighting

Provide lighting along pathways at appropriate intervals to allow sufficient light to safely utilise pathways for recreational physical activity or for commuting outside of daylight hours.

06



entice & enable

If encouraging people to be active on pathways, it is important to provide water to allow them to rehydrate, particularly during warmer months and in warmer climates. It is also important to provide opportunities to sit down for respite, particularly for those with limited physical capabilities.

engage

Providing seating and water fountains along pathways allows groups of people with varying abilities to visit the park, especially intergenerational groups that include older adults. The times when the seating or water fountains are used also provide variety to the ways groups of people interact and engage. For example, in addition to active intergenerational use when on the pathway, using the seating provides an opportunity for more reflective engagement.



07



seating and water fountains

Provide seating and water fountains along pathways that allow park users to rest and rehydrate to ensure they feel comfortable visiting the park.

entice & enable

Providing lighting along pathways can encourage use outside of daylight hours (4). Lighting will allow greater use of the pathway (Schipperijn et al., 2013), particularly before and after work hours, and within the winter months when daylight hours are reduced. Pathway use will only occur if people perceive the environment to be safe, and sufficient lighting allows them to see around them and what is ahead. For people with visual impairments or reduced vision, as can happen in older age, lighting enhances the ability to use pathways during times of lower light levels (Rosenberg et al., 2012; Zhai & Baran, 2017). Also, for commuters who often ride in the early morning or at dusk, lighting is valuable.

engage

For many people, such as those working long hours, group park visitation may be more feasible outside of daylight hours and lighting is necessary for this to occur. For example, for a family to enjoy a walk after dinner, lighting in a park is desirable.

08

views of wildlife

Design pathways adjacent to natural wildlife habitat to allow views of fauna and other interesting elements



entice & enable

Viewing wildlife while using pathways can provide enjoyment for pathway users, providing opportunities to watch birds, turtles, ducks, and other animals (4). Pathways adjacent to water elements or trees attracting specific wildlife allow pathway users to experience them, adding intrigue and interest. Many park users are drawn to pathways that provide these opportunities (1; 4), compared to heavily urbanised environments and mundane parks.

engage

With less time being spent outdoors by many, especially children, pathways that promote viewing and experiencing fauna and flora provides valuable social engagement opportunities. For intergenerational groups of adults or older adults with children, valuable social interactions can occur by asking questions, teaching, and learning. Also, social engagement through sharing joy, wonder, and pleasure are important for connection and likely to create a desire to stay and desire to come back in the future.

entice & enable

Some pathway users seek out the increased physical exertion of going up stairs along a pathway, particularly those wishing to go for a hike or bushwalk (4). When consideration is made for the typical activities on the path, a higher intensity workout can be undertaken by those that desire it. Incorporating handrails would allow those with lower physical abilities to utilise the stairs “at their own pace” (4). However, for a primary pathway, stairs should not be the only option in case it limits accessibility for some users.

engage

Providing stairs or creating pathways through bush contexts could attract more active groups of users. Compared to the flat concrete pathways that accommodate people with mobility issues, these pathways could provide challenge to those who are highly active. Going for a hike or a bushwalk is a fun activity for families to do, where they can “get away from life”, experience nature, and “go exploring” together.

09

physical challenge

Incorporate stairs along a pathway to provide an optional physical challenge, if the park context and topography allow for it.





playgrounds

"The playground equipment is great because it's interesting for the kids. There's lots of different things that they can have a try at, depending on their ability, and challenge themselves."

- Female, 40-44 years, George Wilmore Park

findings +
recommendations

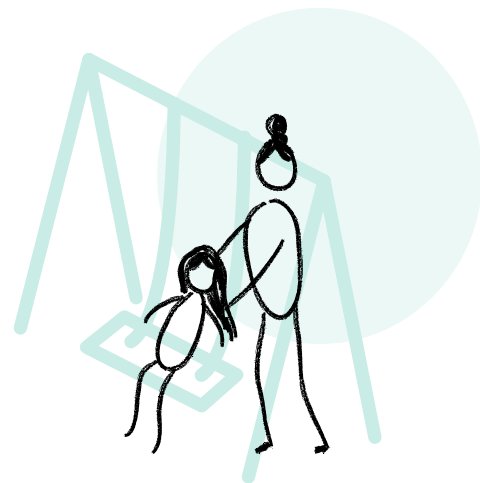


Why are playgrounds important design elements within parks for physical activity?

Playgrounds can afford a wide variety of fun activities for varying ability levels. For example, children often learn to climb and swing, and toddlers learn to go down a slide unassisted. Playgrounds are a key attractor to parks for children and the adults accompanying them.

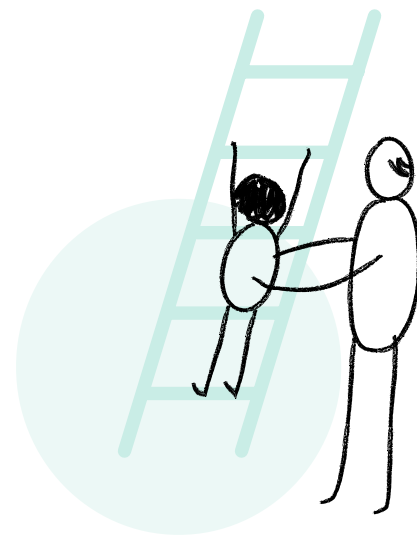
PLAYGROUNDS

our research shows...



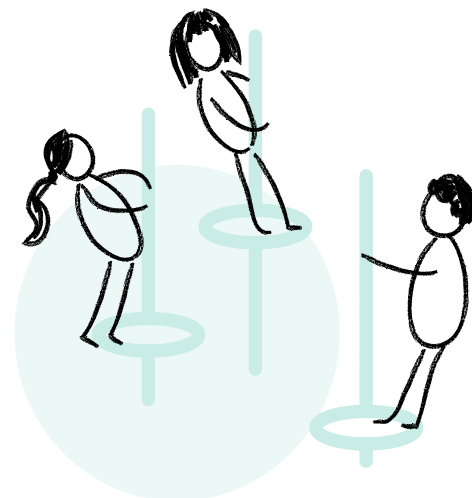
choosing parks with playgrounds

Adults with children or grandchildren under 18 years are more likely to choose to go to a park with a playground.



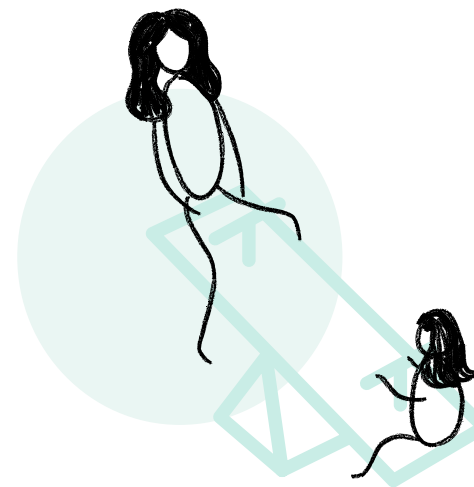
children are most active

Playgrounds are key locations within a park where children are most active.



children can play

One of the top reasons people visit parks is for children to play.



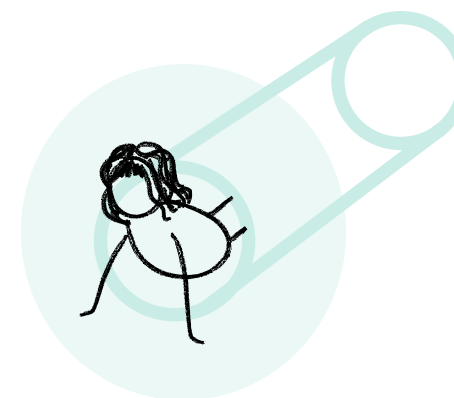
caregivers play, observe and teach

When in the playground, caregivers play, observe, and teach children skills, and often do a combination of all three.



limited opportunities for adults to be active

Playgrounds currently provide opportunities for children to play and be active, but there are limited physical activity opportunities for adults and older adults.



children decide

When at the park, the children usually decide what to do. For many caregivers, they follow the lead of their child because time at the park is viewed as the “children’s time”, and they only intervene if the children’s choices are perceived as unsafe.

PLAYGROUNDS recommendations

<p>01</p> <p>afford both physical and social skills</p> <p>Provide playground equipment that enables a range of physical and social skills to be exhibited.</p>	<p>02</p> <p>cater to all ages</p> <p>Provide playground equipment that caters for different age groups, rather than just one.</p>	<p>03</p> <p>consider under, around, and in between</p> <p>Provide spaces in the playground that allow for playing under, around, or in between different elements.</p>
<p>04</p> <p>ensure a sense of safety</p> <p>Create perceived and actual safety from adjacent roads through distance, vegetation, or fencing.</p>	<p>05</p> <p>provide shade</p> <p>Provide shade over the playground so it is deemed useable during most of the day.</p>	<p>06</p> <p>consider playground location</p> <p>Consider the location of the playground within the context of the whole park.</p>
<p>07</p> <p>provide optimal seating to view playground</p> <p>Consider the placement and design of seating to afford views of the playground and encourage social interactions.</p>		



01

afford both physical and social skills

Provide playground equipment that enables a range of physical and social skills to be exhibited.

entice & enable

Caregivers often visit parks to allow children to play on the playground (1). Many caregivers believe children are more active in the playground compared to other areas of the park, mainly due to the range of physical skills they exhibit (1). Consideration should be given to the range of physical skills promoted by the playground equipment, with a focus on including the greatest variety possible. The physical skills encouraged should include, but are not limited to, climbing, swinging, sliding, spinning, jumping, and balancing. For older adults, accompanying and assisting children is often considered a contribution to their physical activity, e.g. pushing children on a swing (1).

Providing a variety of equipment promotes increased engagement with the space as it allows the children's attention and interest to move from one thing to another (1). Varied equipment that is visually appealing can encourage children to want to stay longer. More time in the playground increases the chances of being active for longer. More equipment is associated with more users and higher levels of physical activity (Cohen et al., 2020).

engage

Playgrounds are typically used by intergenerational groups as caregivers are often present with children (1). Swinging and climbing are skills taught to children by adults in playgrounds (1). For young children, learning these skills is important for physical development, and provides an opportunity for valuable interaction between children and their caregivers.

02

Cater to all ages

Provide playground equipment that caters for different age groups, rather than just one.

entice & enable

Playground areas were used by children playing games that involve running and chasing others under, around, and in-between the equipment (1). Thus, the physical activity in playground areas was not only from using the equipment directly, but also from the children's ability and desire to run, hide, and play games within the spaces created by the placement of the various elements. Even though running games, such as tag, can be played in open spaces, it is enticing to also play these types of games within playgrounds. It is likely that the affordances for playing in playgrounds are clearer and more interesting, than affordances for playing in open spaces.

engage

Children are typically highly engaged and interacting with each other socially in playgrounds. However, getting adults to consistently interact with the children may be the biggest challenge. For some adults, climbing up and in playground equipment may be too physically difficult, while moving around and ducking under equipment may be more feasible. Consideration should be given to creating spaces in which adults can interact with children that does not require them using structures designed for small bodies.

entice & enable

Caregivers often make the decision to visit a park based on whether the playground is deemed age appropriate for their children (1). Families with children of mixed ages have the challenge of finding a park with playground equipment that caters for the different ages (1). Therefore, to appeal to the broadest range of people, the playground should include equipment that is appropriate for toddlers, young children, and school-age children.

Many caregivers simply let their children decide what to do in the playground, unless they deem it too dangerous (1). This suggests that playgrounds are spaces that children are challenging themselves to take risks and make decisions. If playground visitation is the main opportunity for children to explore and develop these skills, and park visitation is often undertaken with a caregiver present to supervise, it is important to ensure playgrounds are designed to enable risk-taking. Physically challenging equipment has been shown to attract adolescents to a park (Veitch et al., 2016).

engage

Many caregivers with younger children assist them in and around a playground (1). Thus, social engagement in playgrounds with young children is high, and the typical equipment enables this. However, caregivers with older children (school-age) do not play with them as much, since these children often play with each other (1). Other research suggests that parents' influence on children's physical activity peaks when children are approximately aged 10 and diminishes through adolescence as they spend more time with their peers and less time with family (Leung et al, 2017; Horn, 2004; Patridge et al, 2008).

As caregivers tend to follow the lead of children (1), interaction is often dictated by the children's need for assistance. Thus, providing equipment that requires adult assistance can encourage intergenerational use. This could also contribute to the adults' daily physical activity levels. Inclusion of equipment typical of a 'senior's playground' (Volkanovski & Marshall, 2015) adjacent to equipment designed for children's use may afford opportunities for interaction.

03

consider under, around, and in between

Provide spaces in the playground that allow for playing under, around or in between different elements.



04

ensure a sense of safety

Create perceived and actual safety from adjacent roads through distance, vegetation, or fencing.



entice & enable

For adults bringing children to play at parks, a sense of safety at the playground was an important consideration, and could be achieved in a variety of ways (1). Some caregivers specifically seek out fenced playgrounds (1). This is to ensure the safety of younger children that are often described as “runners”, e.g., “I have a runner so I have to find a playground with a fully enclosed fence.” Other caregivers do not feel that they require a fully fenced playground, however, for peace of mind they desire a sense of separation between the playground and surrounding road. This can be effectively achieved through vegetation as well as physical distance.

engage

Caregivers are likely to be more relaxed when they feel their children are safe. Although gated play spaces can be criticised, fences or walls can actually provide open-ended play options for both adults and children (Pitsikali & Parnell, 2020). The physical presence and indeterminate nature of fences and walls as non-play equipment, challenges the societal norms that often prevent adults from playing on playground equipment, and affords intergenerational play.

entice & enable

Ensuring there is shade over the playground is critical for many caregivers, particularly during summer months (1). Shade cover impacts decisions about the time of day to visit the park. Shade can provide protection from solar radiation, mitigate excessive air temperatures, and moderate surface temperatures of equipment. Research shows that natural surface materials do not get as hot as artificial surfaces in playgrounds (Olsen et al, 2019). Common surfaces including metal, rubberised material, and artificial turf, materials often found in playgrounds, are the leading culprits of burns in play spaces (Olsen et al, 2019; Asquith et al, 2015). When sufficient shade is provided, users may stay for longer durations, and thus be active for longer.

engage

Caregivers are likely to be more comfortable when under shade cover and may be more likely to play and engage with their children. Research in Germany found that in many playgrounds, children played in the sun, while caregivers were in the shade (Schneider et al, 2020). Because sun exposure is a major concern in Australia, providing adequate shade over much of the playground area could afford additional opportunities for intergenerational interactions.



05

provide shade

Provide shade over the playground so it is deemed useable during most of the day.



06

consider playground location

Consider the location of the playground within the context of the whole park.



entice & enable

Most caregivers observe their children on the playground during their visit to the park, especially those with younger children (1). To draw intergenerational groups to playground areas, adequate seating is important. For example, adults with mobility issues require seating to supervise children in the playground area. Seating provides a chance for respite for all members of a group visiting the park. Those not capable of being very active need seating, and those being active can benefit from taking a break.

Uninterrupted sight lines to most pieces of equipment are desired, as well as multiple seating options around the area. When including seating within the playground area it is important to consider shade and seating surfaces. Consideration of vegetation choice is also important to ensure leaves, fronds, and seed pods falling from trees do not cause excessive issues and prevent use.

engage

Seating should be located close enough so that those needing to use it can still communicate with the children on the playground. Children often want to demonstrate skills for their caregivers or to have them close by to build their confidence.

Seating near playgrounds can afford opportunities to socially engage with others when a group of people all sit down to take a break. Curved seating, tables with chairs, or other seating arrangements promote communication with others since they can face each other. In contrast, linear bench seating provides opportunities for watching people in a different space.

entice & enable

The playground is a key attractor to a park, however the inclusion of other desirable activity areas (e.g., an appealing oval) also impacted the choice of park to visit (1). This is particularly so for intergenerational groups. When the playground area is located adjacent to other active park areas, it may enable more people to be active during their visit.

engage

When taking children to parks, caregivers like to visually see the children to ensure they are safe and provide assistance when needed. To promote social engagement, activity areas that may be appealing and used by accompanying adults should be placed adjacent to or near the playground. Exercise areas are often placed away from playgrounds to allow separation, however having some equipment adjacent could afford greater physical activity by adults, who can still see and interact with the children in the playground.

07

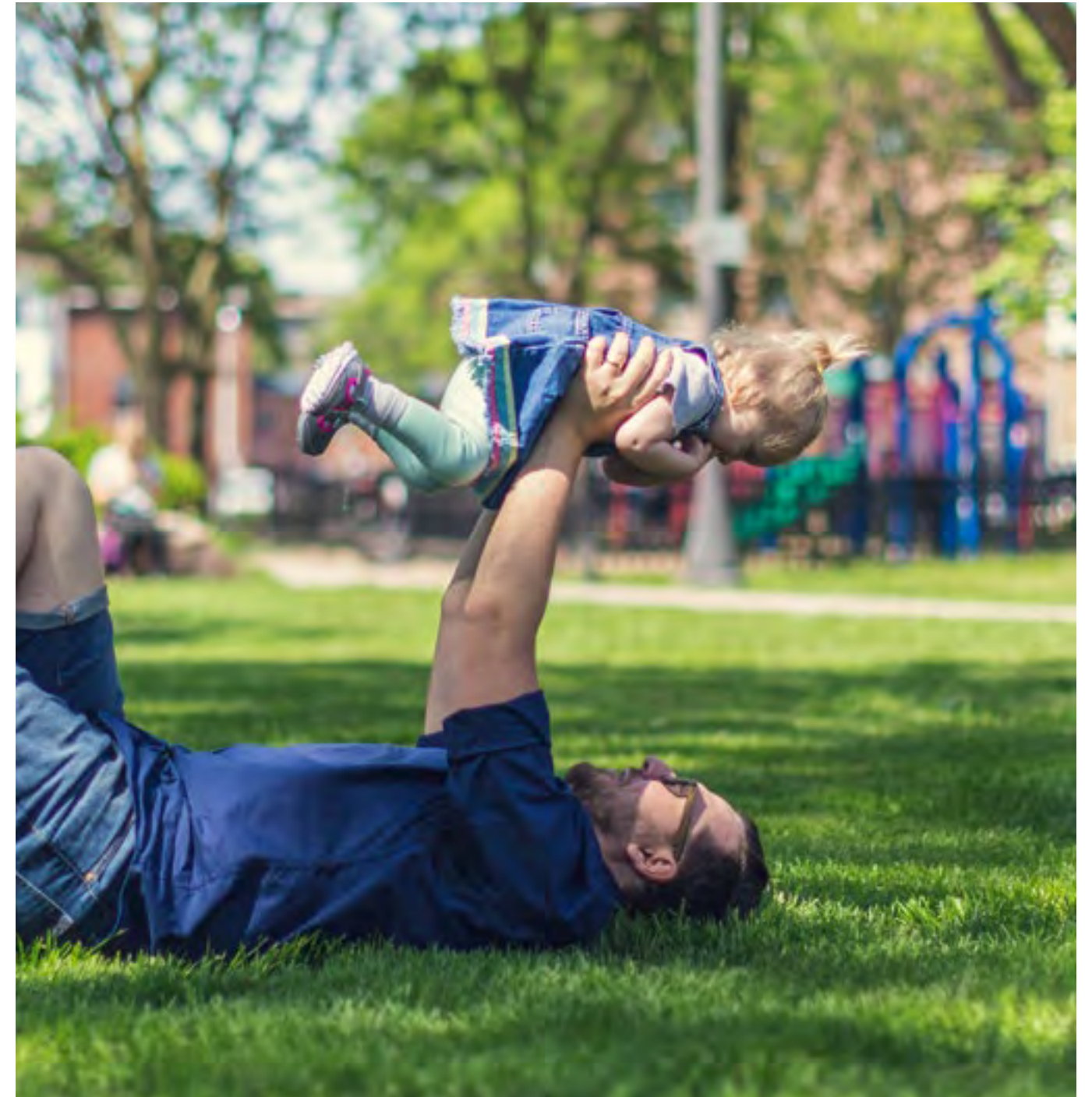
provide optimal seating to view playground

Consider the placement and design of seating to afford views of the playground and encourage social interaction.



Why are open playing fields important design elements within parks for physical activity?

Open playing fields afford a wide variety of activities for all ages and ability levels. Well-situated and well-maintained grassy areas can entice users to a park. The open spaces allow visual connections between activity areas. These spaces also offer flexibility for programmed events and activities.



open playing fields

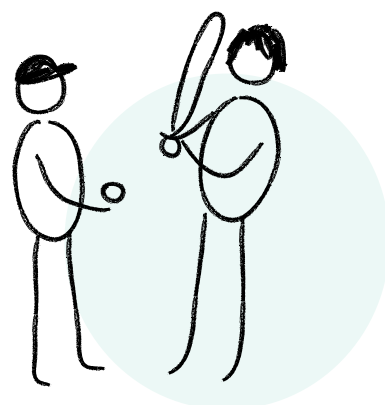
"That is usually where I do the boot camps, just because it's a big open space."

– Female, 30–34 years, Mango Hill

findings +
recommendations

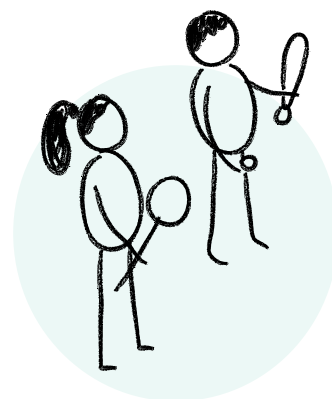
OPEN PLAYING FIELDS

our
research
shows...



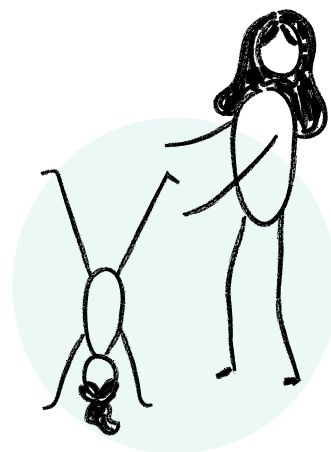
physical activity

Open playing fields are some of the key areas within a park where children and adults, as well as adults without children, are physically active.



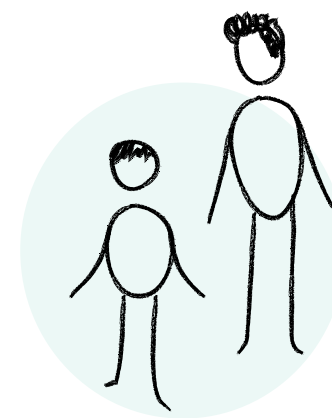
BYO equipment

People who use open playing fields often bring their own equipment, such as a cricket bat and ball, and are happy to do so.



teaching skills

Open playing fields are used by caregivers to teach physical skills and for children to learn and practice these skills, especially kicking, catching, and throwing balls. This engagement demonstrates valuable intergenerational physical activity.



males are drawn to open playing fields

Males seem to be drawn to open space areas for physical activity, slightly more than females.



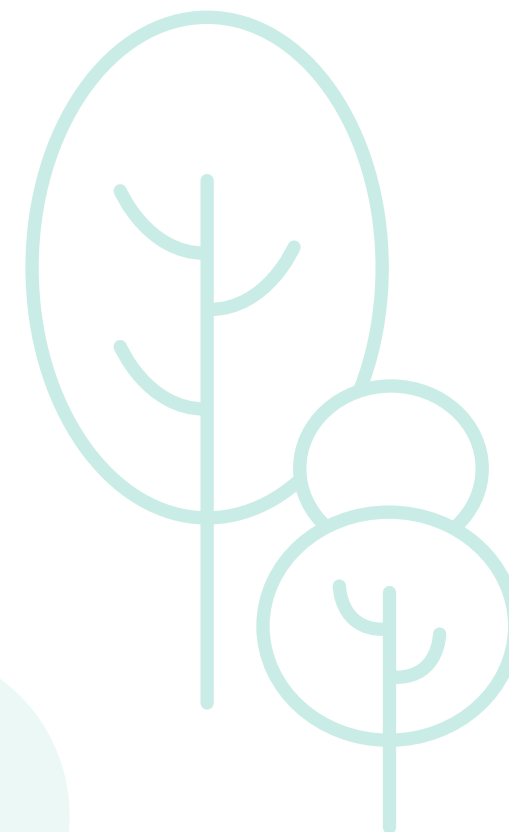
running and kicking

Running around and kicking balls are key activities that adults easily envisage within open playing fields in parks.



lack of visual cues

Open playing fields afford many forms of physical activity. However, there can be a lack of visual prompts or cues to encourage different activities due to the simplicity of their design and limited fixed physical elements in the open space.



OPEN PLAYING FIELDS

recommendations

01

ensure adequate size

Provide open playing fields of adequate size to run around, kick, and throw balls.

02

provide physical design elements

Install physical elements, such as goal posts, into the space to afford potential uses without excluding other uses.

03

create flat surfaces

Provide a flat, even surface that is regularly maintained to ensure consistent use and prevent injuries due to tripping.

04

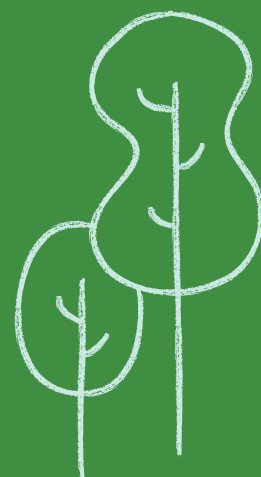
provide shade

Provide shade to promote use during various times of the day.

05

consider location

Consider the placement of open playing fields within the context of the whole park.



01

ensure adequate size

Provide open playing fields of adequate size to run around, kick, and throw balls.

entice & enable

The amount of space designated to open playing fields will vary according to the size of the park and the available space. Prior to the 1980s, Australian suburbs with detached houses typically boasted large backyards of between 150–400 m², however in subsequent decades the provision of large backyards has significantly reduced (Hall, 2010). Therefore, it is important to provide opportunities for participating in outdoor active endeavours in suburban parks that may have once been undertaken in large backyards. Open playing fields within parks are often used for kicking footballs, playing cricket, and practicing other skills such as running and flips (1). It is important to ensure the size of the open space area provides enough room to run, kick, and throw balls during informal play without running into other users.

engage

Open playing fields within parks are often used by adults to teach children ball skills, such as kicking and throwing (1). Programmed events are currently scheduled in neighbourhood parks by local Councils (e.g., Healthy and Active Moreton – MBRC; and Active and Healthy events – BCC) to encourage community members to get outdoors and get active. Activities such as yoga, pilates, tai chi, bootcamps (e.g., cardio-focused or HIIT workouts) utilise open playing fields and grassy spaces in neighborhood parks. These activities allow community members to connect with each other, and it is important there is sufficient spaces for these groups as well as other visitors to engage in impromptu activities at the park. If possible, the size of the open playing field should allow use for formal football matches or cricket matches.



02

provide physical design elements

Install physical design elements, such as goal posts, into the space to afford potential uses without excluding other uses.



entice & enable

Open playing fields were the third key park area used by adults and children for physical activity, after pathways and playgrounds (1). Due to the activities typically undertaken (e.g., running, kicking, catching), providing a flat and even surface reduces tripping hazards, particularly for those unsteady on their feet. A flat even surface is also needed for those learning new physical skills that will be applied on flat surfaces in the future, for example learning to kick a soccer ball or pass a hockey ball, as judging power and distance on a flat surface is different to kicking up or down a slope. Regular maintenance is an important factor for attracting people to the park and being active (Bedimo-Rung, et al., 2005).

engage

Team, group, and reciprocal games allow people to socially connect, and open playing fields afford, and can promote, these games. Teaching physical skills is a valuable form of intergenerational interaction which can form the basis of strong social connections between people. To enhance the chances of positive teaching and learning experiences, flat, even surfaces are ideal for skill acquisition and practicing. In addition, to allow the use of the open playing field for structured or semi-structured uses (such as a soccer match or an outdoor yoga class), a flat and regularly maintained surface is required.

entice & enable

When presented with photos of park scenes, open playing fields were not appealing to many potential park visitors (4). These photos typically displayed grassy areas with scattered trees or vegetation surrounding the area, but lacked obvious cues for physical activity. Providing cues for specific activities can assist park visitors to identify affordances within these areas. A cement or synthetic cricket pitch in the centre of an oval can prompt a small group to play cricket, or even handball, but does not deter others from kicking a soccer ball around in the same space. Other examples of useful physical elements that could be installed in open playing fields include football goal posts or soccer goal nets. Park visitors that utilise open playing fields are typically required to bring their own equipment, but are often happy to do so (1).

engage

The installation of physical elements such as a cricket pitch or goal posts provide clear affordances for these activities (4). Teaching ball skills, such as throwing and kicking, were identified as intergenerational uses between adults and children on open playing fields (1). Teaching someone how to kick and score goals is not easily taught without goal posts, which are unlikely to be available in people's yards. Learning these new skills typically requires repeated instruction and practice, and the provision of these ideal physical elements within a park may encourage return visits and increased engagement opportunities at the park.

Playing many of these games encourages social engagement, even if it is not always intergenerational in nature, as they are frequently played with others. For example, to play cricket you typically need at least one person to bowl and another person to bat. Soccer goals allow a group of people to have an organised match or a social game.



03

create flat surfaces

Provide a flat, even surface that is regularly maintained to ensure consistent use and prevent injuries due to tripping.



04

provide shade

Provide shade to promote use during various times of the day.



entice & enable

Some adult visitors accompanying children to parks appreciate having the open playing field in the centre of the park as it provided sight lines across the park, particularly when pathways encircled the field (1). This could allow children to ride a bicycle or scooter along the pathway with the caregiver feeling comfortable that they could visually see them.

Open playing fields can be an opportune auxiliary space for physical activity for park visitors who are initially enticed to the park for other activity areas such as playgrounds or pathways. For example, children can run around and play in open space while parents utilise the outdoor exercise equipment, or parents can run or practice yoga in the open space while children play on the playground.

engage

Because open playing fields offer opportunities for a range of activities, they are less prescriptive for a single user group. Being strategic about their location within a park, such as close to parking or next to restrooms, can make it easier for different generations to use the space together. When the specific needs of children and older adults are accommodated within or close to an open playing field, it is possible that multiple generations will be able to enjoy the space together.

entice & enable

Large trees within the surrounding environment, such as around the edge of the open playing field, may provide shade on the field at the beginning or the end of the day. The provision of shade may allow park visitors concerned with sun exposure or heat to utilise these spaces when they may otherwise be unappealing. Pathways along water are an appeal for many adults, as they enjoy the cool breezes and sensations felt whilst being active (4). It is possible that provision of open playing fields near water elements that allow breezes of the water could entice active endeavours on these fields.

engage

A great benefit of providing shade is that longer opportunities for social engagement can occur. Informal groups of park visitors, such as families, are more likely to extend their stay in the park when in shaded areas and the heat is not overwhelming. This is especially true for children and older adults who may be more sensitive to heat. During summer in subtropical climates, such as Southeast Queensland, partaking in aerobic-based group activities in a park, such as bootcamp, require shaded areas to reduce the chances of participants overheating.

consider location

Consider the placement of open playing fields within the context of the whole park.

05

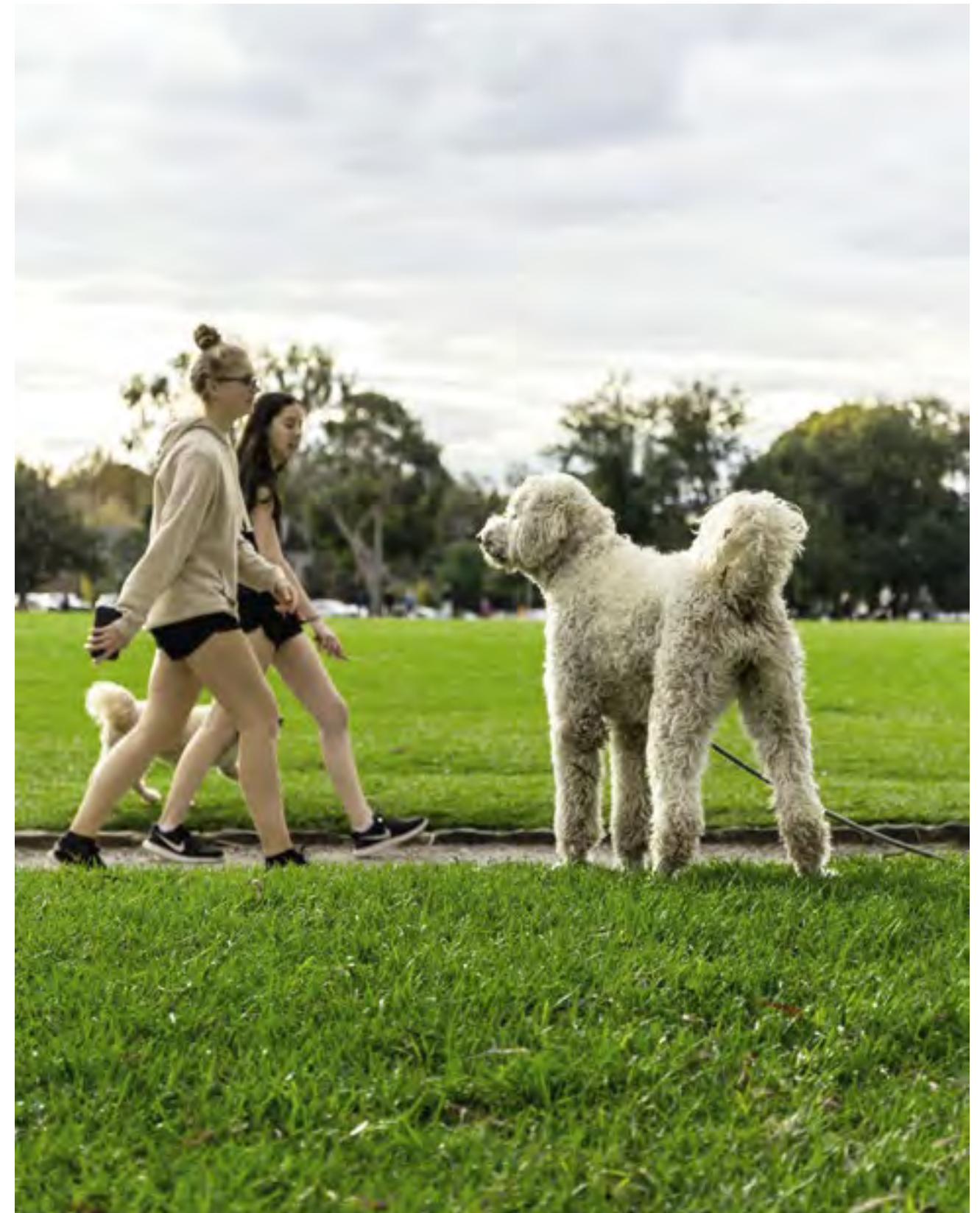


dog off-leash areas

"I like it. It's pretty good, because it's got the trees. He's got a place to run around. I come here or I go to the Deception Bay beach. I take him down there to the dog beach."

- Female, 60-64 years, Yarrabee Park

findings +
recommendations

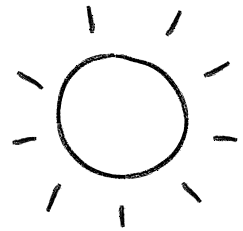


How can dog off-leash areas be re-designed to encourage greater physical activity for park visitors?

Dog off-leash areas can entice people to a park, but often do not provide many affordances for people to be physically active within them. However, these can be key areas that people with dogs often look for and use in their neighborhood or community park, and therefore have potential for getting people more active. Past research suggests that many people think dog off-leash areas provide opportunities to meet neighbors and build a sense of community by interacting with others (Lee, Shepley, & Huang, 2009).

DOG OFF-LEASH AREAS

our
research
shows...



mornings are popular

Within some parks, morning hours were more popular than afternoon hours for off-leash dog parks.



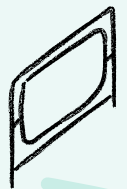
adults being active

Approximately 15% of adults chose a dog off-leash area as a scene that would attract them to a park to be active. Of those, over 80% believe they would be active within the area.



potential intergenerational activity

Some caregivers feel the fenced areas are suitable for their children, as well as their dog, to play in a contained space. Adults, children, and dogs playing in these spaces demonstrates a fun way to achieve intergenerational physical activity.



dog exercise

Many people visit parks to give their dog exercise opportunities or to be off-leash with other dogs, particularly adults without children.



walking to off-leash areas

Walking the dog for exercise is one of the top activities undertaken by adults to keep active. Pathways leading to or connecting off-leash areas are also important to afford dog walking.

Intergenerational parks

DESIGN GUIDE

DOG OFF-LEASH AREAS recommendations

01

locate them along paths

Include dog off-leash areas along walking paths, with connecting pathways leading directly to the entrances.

02

ensure maintenance

Ensure consistent maintenance to encourage people to be physically active in the dog off-leash area, rather than simply observe their pets.

03

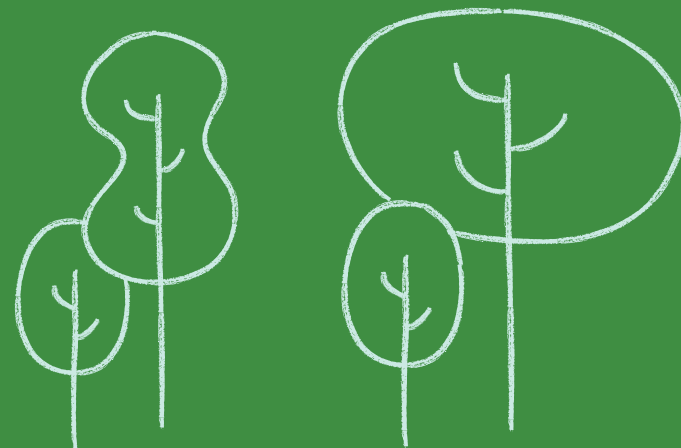
accommodate all hours

Maximize use during all hours of the day and during inclement weather.

04

promote use by children

Promote children's use of dog off-leash areas, which can lead to intergenerational engagement.



01

locate them along paths

Include dog off-leash areas along walking paths, with connecting pathways leading directly to the entrances.

entice & enable

Dog walking is an important activity for many adults and children, and over 25% of participants mentioned that they walked their dog as a form exercise (not necessarily done within parks) (4). Past research confirms that dog walking in parks and public open spaces are popular forms of physical activity. Dog-supportive parks encourage dog-owners to walk their dog regularly and many appreciate being able to have their dog off leash (Westgarth, Christley, & Christian, 2014). People may be enticed to visit a dog off-leash area while walking their dog along a walking path. Providing these park features (walking paths and off-leash areas) together may enable more people to visit a park to be active.

engage

Pets can be an important incentive for getting exercise, and dog walking together as a family or intergenerational grouping could be an opportunity for interaction and engagement. During the height of COVID19 in 2020, the second most common reason for leaving home was for exercising or walking pets (73%) (ABS, 2020), which suggests dog walking is a necessity that could be further promoted.

ensure maintenance

Ensure consistent maintenance to encourage people to be physically active in the dog off-leash area, rather than simply observe their pets.

02



entice & enable

Approximately 15% of adults chose a dog off-leash area as a scene that would attract them to a park to be active. Of those, over 80% believe they would be active within the area (4). One participant noted that having well-maintained grass was an important attractor. Therefore, the cleanliness of a dog off-leash area is critical to entice people to use it. Maintaining the area so that it does not have large patches of exposed dirt, and ensuring it is even and free from holes or mounds will allow for people to walk in the area more easily. Water sources that are available and maintained can be important for use by both people and dogs. In addition, the presence of dog litter bags and bins will send important cues to dog owners to pick up after their dogs and will make other users less cautious about walking around in the area.

entice & enable

Because morning hours were more popular than afternoon hours for off-leash dog areas (2), there is an opportunity to entice people to dog parks during other parts of the day. Depending on the conditions in the park, this may require providing extra shade, lighting, and shelter from rain to extend the times of day when the off-leash area could be used and make it more enticing during off-peak hours. Dog walkers have been shown to be more consistent in their park use than other park visitors, even in inclement weather (Temple et al 2011), yet park visitation for walking and watching dogs is often for shorter durations than visiting for other activities (Evenson et al., 2016; Veitch et al., 2019). Ensuring dog off-leash areas are comfortable and safe during all hours may entice more people to use them and to stay longer, which can potentially lead to more physical activity.

engage

Children and older adults are often more susceptible to heat and other weather extremes. Providing amenities in the dog off-leash areas that make visits more conducive to people of all ages and abilities could afford opportunities for intergenerational engagement.

accommodate all hours

Maximize use during all hours of the day, and during inclement weather.

03





04

promote use by children

Promote children's use of dog off-leash areas, which can lead to intergenerational engagement.

entice & enable

Some parents indicated the possibility of children playing within the fenced area of a dog off-leash area as a bonus, and dogs can be an incentive for children to be active (1). Past research suggests that children from dog-owning families are more physically active and recorded more steps per day, than children without dogs (Owen et al., 2010). However, other research found that children at a park with dogs were more likely to be sitting or in lighter activity, compared to when at the park without their dog (McCormack et al., 2016; Vietch et al., 2019). Therefore, it is critical to design dog off-leash areas to enable children to be physically active either with their dog or simply in the same space so that caregivers can watch them.

engage

Concerns about children and dogs coming into contact has been raised. Separation of dog off-leash areas from play areas has also been indicated as a preference (Westgarth, Christley, & Christian, 2014). Therefore, it is important to consider the placement of the dog off-leash area within a park to ensure there is actual and perceived safety for children who are not there with a dog. Creating dog off-leash areas that promote intergenerational interactions may also enable adults to teach children proper dog handling skills.

data sources: 1 = park interviews; 2 = SOPARC observations; 3 = community interviews; 4 = community photo-choice tool



n.b. within this research we only investigated parks with fenced dog off-leash areas, and perceptions of park photos with fenced dog off-leash dog areas. Discussion of the benefits of non-fenced off-leash dog areas is undertaken in Section 3 of these guidelines.



"It has a gym circuit, [so] I can get involved with the family and have lots of fun. It's not just the kids having fun."

- Female, 40-44 years,
Strathpine Centre

outdoor exercise areas

findings +
recommendations



How can outdoor exercise areas be re-designed to encourage greater physical activity for intergenerational park visitors?

Outdoor exercise areas that include specific equipment can afford physical activity, however they do not appeal to a large number of park users. The exercise areas and equipment are designed and sized for adults. Those attracted to them believe some other family members (both children and adults) could also potentially be active in those areas.

OUTDOOR EXERCISE AREAS
findings

OUTDOOR EXERCISE AREAS

our
research
shows...



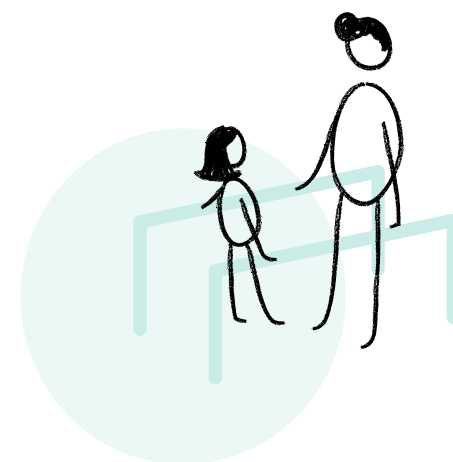
somewhat limited appeal

Outdoor exercise areas do not appear to entice adults to a park as much as a well-designed pathway. However, they do appear to have broader appeal than a basketball court or dog off-leash area.



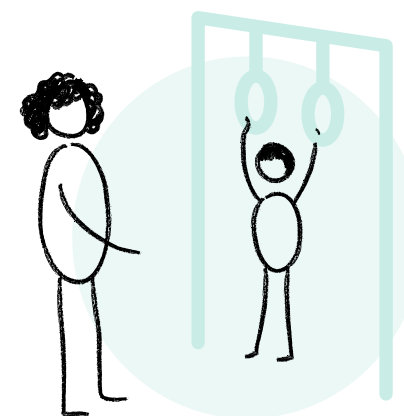
currently under-used

Outdoor exercise equipment was used for physical activity by a very small proportion of adult park users (2.8%), and an even lower proportion of children (1.2%).



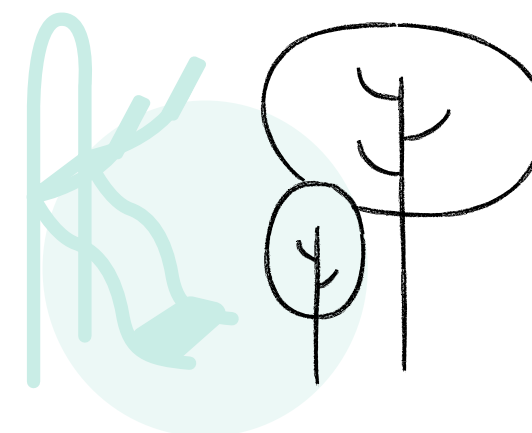
afford physical activity

Over 95% of adults who were attracted to outdoor exercise areas believe they would be active in them, and approximately half indicated another adult and/or children would also be active.



intergenerational activity not yet afforded

Adults can be physically active in outdoor exercise areas, however intergenerational physical activity is likely to only occur if the equipment also caters for movements and activities in which older adults or children can participate.



enticing elements

Areas with outdoor exercise equipment were described as appealing when in the shade, afford a variety of exercises, and look fun. It was also noted as positive that there is no cost to use the equipment. Adults believe the areas can be appealing to and used by other family members.

OUTDOOR EXERCISE AREAS recommendations

<div>01</div> <div>consider placement</div> <div>Consider including exercise zones in busier areas of parks and make them visible along pathways.</div>	<div>02</div> <div>afford use at all times</div> <div>Provide design elements to promote use during various times of the day.</div>	<div>03</div> <div>include variety</div> <div>Provide equipment that affords a variety of exercises.</div>
<div>04</div> <div>focus on visual appeal</div> <div>Select equipment that is visually appealing, looks fun, and is colourful.</div>	<div>05</div> <div>accommodate children</div> <div>Provide options for children around the adult equipment, rather than on the equipment. Or provide equipment that caters for or can adapt to children.</div>	



01

consider placement
Consider including exercise zones in busier areas of parks and make them visible along pathways.

entice & enable

Visibility of exercise areas helps to raise awareness. Parks that are used for other physical activities, such as walking and cycling, may benefit from offering outdoor exercise areas and equipment to afford additional forms of physical activity for active park users. In addition, stretching stations can be placed along a linear park or walking path to provide places for people to stop for a short time to stretch or do a specific movement such as squats or lunges while walking or running. These areas may also be enticing for sedentary park visitors if placed in highly visible locations.

engage

By appealing to groups, exercise areas can promote active social engagement. Adults believe that the outdoor exercise areas could be used by other family members (3). However, currently the areas were under-utilised as park spaces. Carefully considering the placement of exercise zones or stations could potentially enable more park visitors to use them and socialise with the people they came with. Further, placing the equipment adjacent to other high use areas, or those for complementary uses, can also facilitate active people to acknowledge other park users doing similar activities.

02

afford use at all times

Provide design elements to promote use during various times of the day



entice & enable

The decision to use equipment is often influenced by the provision of shade over the equipment. To ensure the equipment does not get too hot, and the user is not in direct sunlight, sufficient shade at key times of day is important. This will help promote use during all times of the day. Older adults are more likely to be available during the middle of the day. Climate conditions, such as wet or hot weather, can play a major role in safety, usability, and comfort. Shade provided by an overhead structure or trees might be required for adequate protection over the exercise area and visitor's health and safety (Levinger et al., 2018).

engage

When the conditions and temperature are comfortable and conducive to being active outdoors, users are more likely to stay for longer durations. When visiting in groups, staying longer allows more time to socially engage with others.

Although park visitors are more active during the morning hours, parks are more frequently visited in the afternoon (2). By providing sufficient shade coverage to regulate the temperature in the exercise area in the afternoon, adult park visitors, who may be there with children, may be more likely to use the area for physical activity while they are already in the park.

entice & enable

Outdoor exercise areas are different from attending a gym or fitness centre. However, it is important to afford a variety of exercises for a whole body workout if desired. Adults suggested that these areas are appealing if they include a variety of equipment (4). If people are unable to complete certain movements due to mobility or injuries the spaces should be designed so that they have sufficient alternatives to get a quality workout. In addition, different ability levels need to be catered for. The use of outdoor exercise areas was reported as a potential equitable approach to engaging older adults in a variety of physical activity types (Stride et al, 2017). These outdoor exercise areas could be modified for older adults and children.

engage

Outdoor exercise areas that include variety may be able to keep people in the park longer, allowing users to come in groups with different skills or abilities. Having workout partners can often be motivating and provide accountability to actually complete a workout session. Providing a variety of equipment will enable multiple people to use the space at the same time, giving them an opportunity to socialise with others in their group or other park users who are there at the same time.

03

include variety

Provide equipment that affords a variety of exercises.



focus on visual appeal

Select equipment that is visually appealing, looks fun, and is colourful.

04



entice & enable

If the equipment is well maintained and has visual appeal, then it is more likely to draw people in, and get them to come over and try out the equipment. Clear signs or cues should be included in the design to indicate which movements are appropriate and promote general use. When the equipment looks “fun” kids want to try it, and intergenerational use can occur.

entice & enable

Since outdoor exercise equipment that is for general use might not be easily sized for children’s use, providing separate options for children within or around the area can entice intergenerational groups. This can be separate play equipment placed within the area, or interactive games on the ground or next to the equipment that could entertain children. There may be advantages of locating exercise areas near existing children’s playground to encourage intergenerational activity, as many older adults take their grandchildren to the park for the children to play (Levinger et al., 2018).

engage

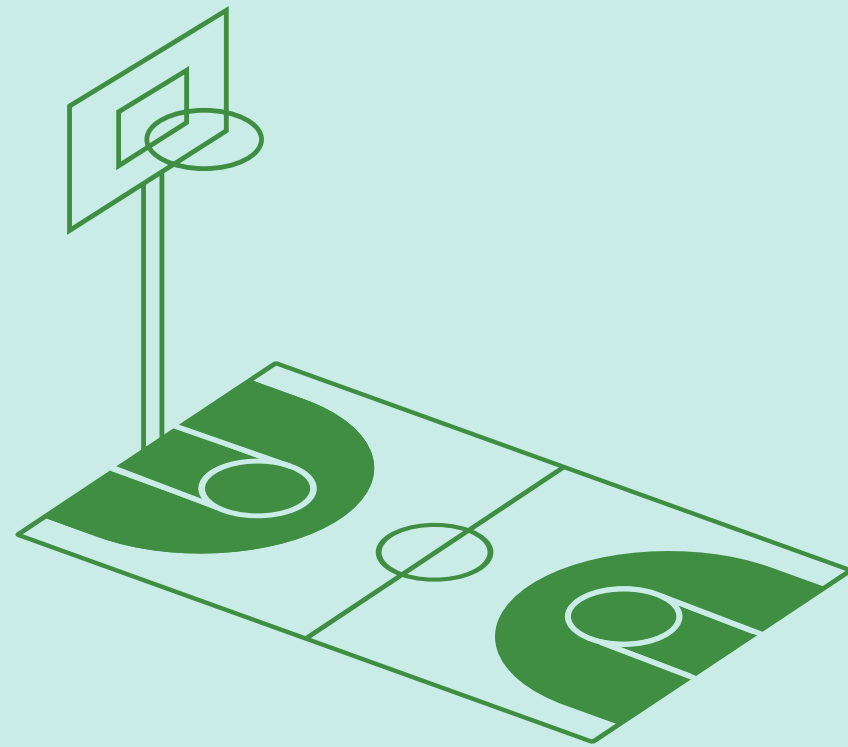
Enabling social interactions between adults and children in an outdoor exercise area could be a way to encourage intergenerational engagement. If children have games or exercises to do, they may be more likely to stay occupied while the adults exercise. Or if adults need to assist children on the equipment, it could be a way to encourage both ages to be active at the same time. Providing equipment for children next to adult equipment could also promote friendly competitions or side-by-side activities as a bonding opportunity.

05

accommodate children

Provide options for children around the adult equipment, rather than on the equipment. Or provide equipment that caters for or can adapt to children.





other activity areas

basketball courts

"Looks like a nice big space and I can shoot balls for my kids"

- Female, 35-39 years, Caboolture Square



community gardens

"I love gardening and I think it will be a good place to meet friends and do purposeful things"

- Male, 60-64 years, Peninsula Fair



findings +
recommendations

Other attractions to parks

Parks include many different features that could entice people, in addition to those discussed earlier. Two of those mentioned in our research include basketball courts and community gardens. However, these were not as prominent as other park areas such as playgrounds.

our
research
shows...

BASKETBALL COURTS

limited appeal

Courts are an appealing park inclusion for those that like to play basketball, however they were not appealing for many others

used during school holidays

Basketball courts are key areas during school holiday programmed events for children

not appealing to older adults

Basketball courts were used by children and adults, and teenagers at times, but not used by older adults

affords being active together

Basketball courts were identified as areas that would get family and friends active together

used by males

Basketball courts were used more by males than females

COMMUNITY GARDENS

spaces for learning

Gardens were identified as spaces to learn and teach, between adults, as well as adults teaching children

being active

A high proportion (greater than 95%) of adults who would like to see a community garden in their local park believe they would be active there

opportunities to build social connections

Community gardens present a good opportunity to meet other people and form social connections

appealing to older adults

Community gardens are an appeal for older adults

recommendations

BASKETBALL COURTS

<div>01</div> <div>accommodate children and teenagers</div> <div>Provide basketball courts in neighbourhoods with school-age children and teenagers.</div>	<div>02</div> <div>design them as multi-use</div> <div>Provide opportunities for other uses, such as netball, handball, or hopscotch, when the court is not being used for basketball.</div>	<div>03</div> <div>consider placement</div> <div>Consider the placement of basketball courts within the context of the whole park, considering easy access from major entry points and adjacent activity areas.</div>
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COMMUNITY GARDENS

<div>01</div> <div>design for varied skill levels</div> <div>Design community garden spaces for a variety of skill levels to attract a range in ages.</div>	<div>02</div> <div>afford social interactions</div> <div>Design community garden spaces to encourage social interactions while working on garden beds.</div>	<div>03</div> <div>accommodate children</div> <div>Design garden beds to allow use by children (sightlines and arm reach).</div>
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01

accommodate children and teenagers

Provide basketball courts in neighbourhoods with school-age children and teenagers.



entice & enable

As school-age children and teenagers are key users of basketball courts, providing them in parks that service neighbourhoods with high proportions of those ages could entice them to visit parks to be active. Additionally, parks near schools could include courts to enable after-school use. Past research suggests that basketball courts are key activity areas for boys, men, and particularly teenagers (Baran et al., 2014).

engage

Programmed events, such as school holiday workshops, often draw children and teenagers to a park (2). Organising more programming, such as after-school sessions, or even weekend skills development workshops could help engage more groups of children with other children and adults using the basketball courts.



02

design them as multi-use

Provide opportunities for other uses, such as netball, handball, or hopscotch, when the court is not being used for basketball.

entice & enable

Netball was identified as an affordance on basketball courts (4), however there are differences in hoop/ring height and circumference between the sports. To encourage the use of these courts for netball, provide netball rings on the back of the basketball backboard and hoop, with sufficient space behind the court for shooting goals. Fencing around the court can allow games like handball to be played without the handball escaping. Other games, such as hopscotch, can easily be drawn or painted on the court to attract other uses.

engage

Appealing to people interested in other sports that require a similar surface to basketball may be a way to enable park visitors to engage with each other. Netball is one of the most popular female sports in Australia; as such, the presence of netball rings may encourage more females to utilise these spaces. Providing netball rings and other game opportunities can afford teaching and learning experiences, including intergenerational interaction. Basketball can be challenging for young children, so encouraging other games such as handball or bouncing a ball that is an appropriate size, weight, and material for the child, could engage younger children on a basketball court.

entice & enable

Basketball courts are not typically used by caregivers accompanying children to the park to use the playground, so they do not necessarily need to be located near the playground. To entice children and teenagers to use the basketball court, it could be beneficial to place them in view of people passing by the park either to play a game or be a spectator.

engage

Basketball courts were described as areas that park visitors would be active with their friends and family (4). As it is an activity that can be done with a group, placement near BBQ areas could be beneficial to enable groups to be active during social gatherings.



03

consider placement

Consider the placement of basketball courts within the context of the whole park, considering easy access from major entry points and adjacent activity areas.



entice & enable

Older adults would like to see community gardens in nearby parks as something to attract them in addition to walking (and/or exercise equipment) (3). Community gardens can be used by all ages and all ability levels (which is why they are so appealing), allowing use for those with limited mobility. Pushing, pulling, digging, reaching, and balancing are some of the skills afforded by gardening.

Gardening is an activity that is commonly undertaken by older adults, and it has been found to significantly contribute to their physical health and well-being (Wang & MacMillan, 2013). Even though gardening may not be strenuous enough to contribute to Moderate to Vigorous Physical Activity (MVPA) or considered typical bone strengthening activities, gardening could have positive physical benefits for older adults. For example, gardening may improve body strength, hand strength, and flexibility (Park & Shoemaker, 2009; Park et al., 2009). The reported benefits for older adults of utilising a community garden includes physical activity at an appropriate level for their needs (Sanchez & Liamputtong, 2017). Depending on the type of work needed within the garden, it is possible that those capable of tasks such as carrying loads in a wheelbarrow, digging, or raking leaves can undertake these to contribute to their weekly MVPA and muscle strengthening activities (Department of Health, 2019).

engage

Gardens require the input of people with a variety of ages and ability levels, which encourages social interaction. Teaching skills and learning skills, and developing knowledge about nature, food sources, and life cycles, can provide common topics for intergenerational groups to explore. Gardening together can afford a sense of sharing and giving back.

01

design for varied skill levels

Design community garden spaces for a variety of skill levels to attract a range in ages.



afford social interactions

Design community garden spaces to encourage social interactions while working on garden beds.

02



entice & enable

An appeal for community gardens is the social interaction that it enables. The size and configuration of the garden beds will vary depending on the unique site characteristics.

engage

Working together on a garden bed promotes social engagement between different groups. Designs should enable interaction between people while working on the same garden bed next to each other, across from each other, and behind each other. Accommodating multiple people in one area is an important consideration so the space doesn't feel overcrowded.

entice & enable

Community gardens are not typically designed to attract children, so in order to entice intergenerational groups to use them, they need to be designed to accommodate younger ages. Children are typically interested and intrigued by new or novel things. Gardens can be designed so that all ages can see and reach the garden beds to water the plants, pull the weeds, and harvest the fruits and vegetables.

engage

With children being able to contribute to the creation and maintenance of the gardens they can be engaged with others also doing the same. Even though gardening is more popular with older adults, it is an activity that people of all ages can participate in, and that can be done with multiple people at a time. Thus, gardening provides great opportunities for social connection, including between generations. Interestingly, 36.1% of the participants who selected the community garden photo said children would be active in that scenario, suggesting scope for intergenerational interactions in these spaces (4). Community gardens afford opportunities for older adults to share their life experiences and knowledge with younger generations, a particularly valuable form of intergenerational social engagement.



03

accommodate children

Design garden beds to allow use by children (sightlines and arm reach).



The following Checklists are based on the Recommendations derived from the Findings reported in Section 2. Each Checklist provides a set of questions that allow for a scaled response, from "not at all" to "exceeds", that can be used to evaluate a proposed design or an existing park.

The Design Ideas are from a workshop during which stakeholders examined the findings from the research and creatively expanded upon the Findings and Recommendations. The workshop focused on further opportunities for fostering physical activity and intergenerational interaction while building on the recommendations. The stakeholders were encouraged to focus on elements that allow for fun, adventure, and excitement, for all ages and ability levels.

3 checklists + design ideas

102	pathways	116	dog off-leash areas
106	playgrounds	120	outdoor exercise areas
112	open playing fields	126	other activity areas

PATHWAYS

design checklist

*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none"> Does the path material provide a smooth surface, such as concrete or asphalt? Is a boardwalk provided to enable walking near water? Are pathway surfaces well-maintained? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none"> Is the pathway positioned among established trees and shrubs? Is the pathway located above or beside water bodies? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none"> Do mature trees cast shade over the pathway? Does the park topography create shade on pathways during certain times? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
04	<ul style="list-style-type: none"> Does the pathway extend through the entire park? Does the pathway connect with other parks or trails as part of a system? Is there variation in the vistas along the pathways? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
05	<ul style="list-style-type: none"> Is the pathway wide enough for multiple people side-by-side? Are there separate travel lanes marked on the pathways for different directions? Are bicycles and pedestrians separated? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
06	<ul style="list-style-type: none"> Are lights provided at regular intervals to avoid dark spots? Is the light emitted unobscured by natural or physical elements? Do the lights provide sufficient illumination for evening use? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
07	<ul style="list-style-type: none"> Is there seating provided at regular intervals? Can seating be provided at varying heights and configurations? Are water fountains (bubblers) provided? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
08	<ul style="list-style-type: none"> Can wildlife be viewed along the pathway? Is wildlife habitat present, such as creeks and trees with birds' nests? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
09	<ul style="list-style-type: none"> Does the topography warrant stairs to include additional challenge? Are stairs incorporated where accessibility is not an issue? Is a handrail provided for support? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the pathway recommendations on page 36

PATHWAYS

design ideas

1 distinct primary and secondary pathways

Primary pathways can be designed for walking, jogging, and cycling, with secondary pathways designed for alternative uses, such as:

- Ramps for bikes
- Stones/boulders to jump across
- Colours embedded in the path that give cues to move in a certain direction
- Mindfulness walk
- Rumble strips for scooters



2 a nature play passport or treasure hunt along a pathway

A site-specific nature play passport can be a fun way to incorporate education, intrigue, and exploration along a meandering pathway so people get excited about being there. A treasure hunt with clues or a sensory trail could also encourage people to explore the whole park.



3 incremental attractions or distance markers along a pathway, with sight lines to draw people into the next destination

Pathways can be designed to provide glimpses of water elements or upcoming vistas. Distance markers that report the distance but also include motivational sayings like "Sore today, strong tomorrow" can incentivise people to keep going.

4 a rainforest or woodland walk with layered native vegetation to provide habitat

Native plants can attract wildlife and contribute to an interesting walk through habitat, which is a prime learning experience between generations. Sight lines within vegetation are important for CPTED (Crime Prevention through Environmental Design) purposes to ensure perceived and actual safety.





PLAYGROUNDS
design
checklist

*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none">Are different physical movements accommodated on the equipment?Do visual cues indicate possible movements?Does the playground encourage social interactions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none">Do equipment heights and sizes vary?Are differing skill levels accommodated?Are there safe options for risky play?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none">Can a child or adult climb under equipment safely?Is there space to move around equipment easily?Are there connections between different elements?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
04	<ul style="list-style-type: none">Is a fence the best option considering the surrounding areas and land uses?Can vegetation create separation, and also serve other purposes (e.g. habitat)?Is the playground located in a safe location?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
05	<ul style="list-style-type: none">Are there sunny areas of the playground that require shade?Can vegetation be used for effective shade?Are materials that will absorb/retain solar radiation under cover?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
06	<ul style="list-style-type: none">Is the playground adjacent to compatible areas in the park?Are there good sightlines for caregivers?Is the playground safe from hazards?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
07	<ul style="list-style-type: none">Is seating placed with views of the playground?Does seating encourage interaction through its arrangement and design?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the playground recommendations on page 50

PLAYGROUNDS design ideas

To foster intergenerational physical activity and social interactions in playgrounds, they should afford opportunities for fun, adventure, and excitement.

1 graduated challenge

Challenge is important for children as they learn how to take risks and push themselves incrementally. However, the risky play should still be free from hazards that could be dangerous. Playgrounds should be designed with inherent challenges that are attainable by younger children who want to improve their motor skills. To encourage intergenerational use, ability levels can be matched between generations, for example toddlers and older adults may have similar ability levels.



2 playful elements embedded within a natural area

Play elements immersed in natural environments offer opportunities for exploration and discovery. Playgrounds with adjacent creeks provide opportunities for splashing, watching wildlife, and experimenting (e.g. watching leaves being swept by a current). Adjacent woodlands afford exploration activities, such as collecting sticks, seed pods, and pebbles. Maneuvering along uneven terrain, and carrying heavy objects like rocks, are beneficial physical movements to help with coordination, balance, and strength. Social connections with peers can be formed by discussing ideas, creating consensus, and working together to create something unique. Children can lead the process but seek adult advice or assistance with heavy lifting.

3 playground equipment that can or should be used by adults

Common play equipment can withstand the bodyweight of adults. To encourage the use of play equipment by adults, ensure that it looks like an adult could fit within, around, and on it.

Equipment that encourages or requires adults to play on it at the same time as children facilitates intergenerational interaction. Examples include side-by-side slides, see-saws, double-wide swings, child and adult facing swings, or even a ninja course. Equipment that requires adults to assist will also enable both adults and children to be active (e.g. a flying fox that requires an adult to lift the child and push them along).



4 play and social interaction opportunities throughout a park

As play is a key way that children are active, and if adults join in it can contribute to their daily physical activity, consideration should be given to having play nodes throughout the park, rather than concentrated in one location. A number of play nodes could be interconnected throughout a park, or strategically placed as elements of surprise within different areas. In addition, features of a park, such as seating or gateways, can also be designed as playful elements.



5 site specific design that celebrates a sense of place

Highlighting the local flora and fauna through the design can celebrate and embrace the uniqueness of each park. This can enable young children to identify, label and share their park preferences without knowing the official name or location of a park.

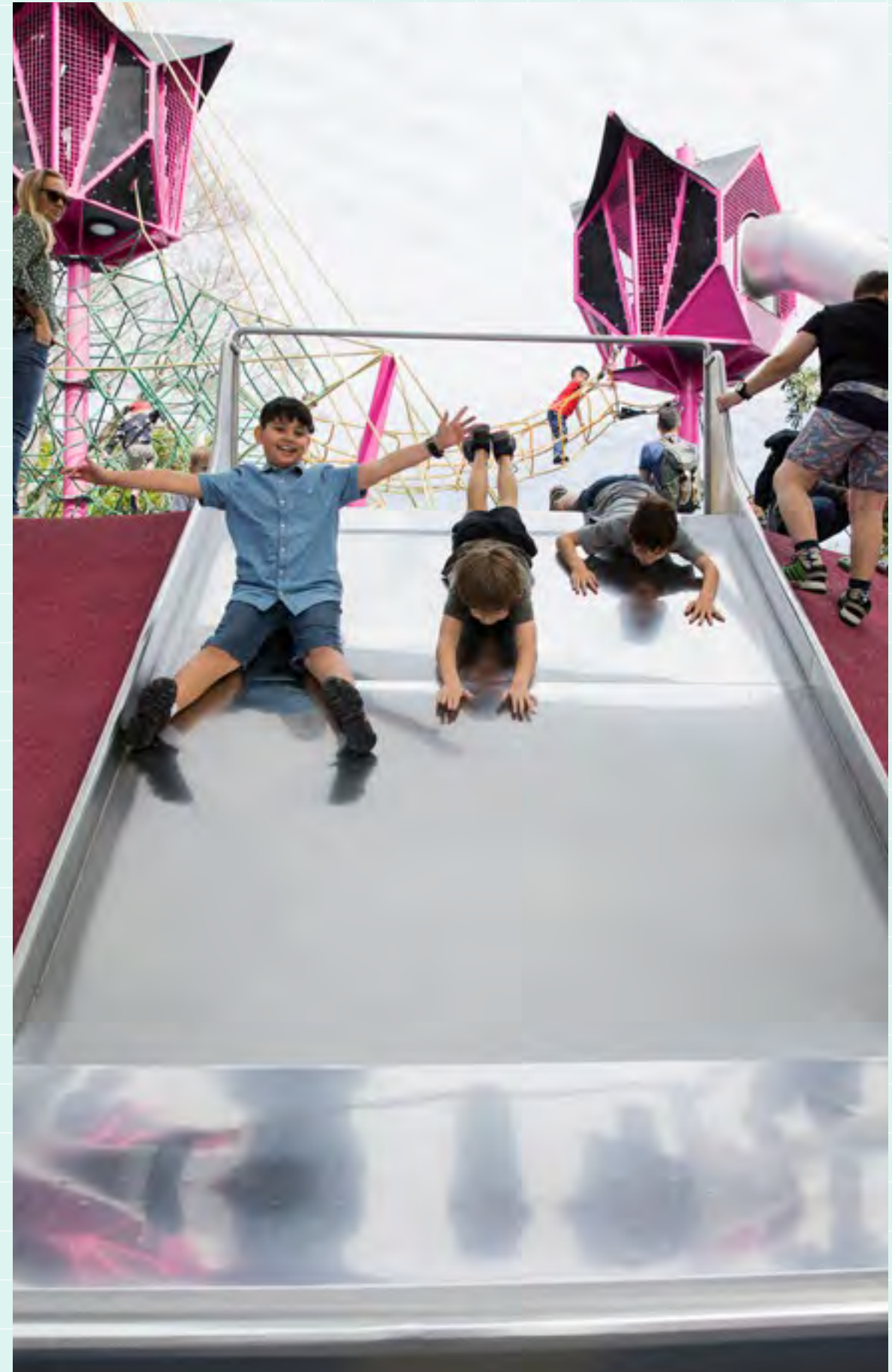
Embed layers of history through physical installation of materials or equipment, such as a working water pump with interpretive signs and suggested activities reminiscent of previous water-related industrial uses.

Varied topography can create opportunities for prospect/refuge with viewing options. Embankments can be used to embed slides or simply as hills for rolling or running down, and then running back up to reach the top. Natural topography can also help to define zones within the park.



6 new technology to encourage active play

Technological advancements can afford fun activities. For example, music can accompany a repetitive activity; when the tempo increases, the person is encouraged to speed up the activity. Or children and adults can compare their speed to the speed of different animals in order to make running and being active more fun.



OPEN PLAYING
FIELDS
design
checklist

*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none">Does the field maximise available open space?Is the field large enough for multiple types of ball sports?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none">Are marked field lines provided for games like soccer and cricket?Are goal posts located at both ends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none">Is the field relatively flat?Is the field free from holes or mounds?Does regular maintenance occur?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
04	<ul style="list-style-type: none">Are there mature trees surrounding the field?Does the topography of the park or adjacent landscape cast shade over the field?Is there a shade structure to sit under?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
05	<ul style="list-style-type: none">Does the field have a pathway circling it?Does the field border other activity areas, such as playgrounds, or exercise areas?If balls are thrown or kicked out of bounds, will it be a potential hazard?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the open playing fields recommendations on page 62

OPEN PLAYING FIELDS

design ideas

1 programmed activities for activation

Enable the use of programmed events and activities to activate the space. Activities can be large, such as a festival, and small, such as a yoga class. Place the open space in the middle and surround it by other uses such as cafes and community centres so that they spill onto the open space area and activate it. Elements that attract social groups and celebrations, such as BBQs, toilets, lights, and seating can allow for extended time spent in a park, and can accommodate people with a variety of needs, such as young children or older adults that require toilets in close proximity.

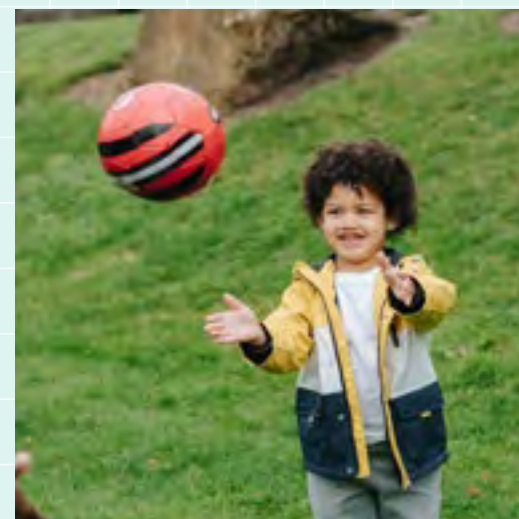


2 signs and cues that give "permission" to use the space

Communicate what park visitors CAN do in a space, rather than what they cannot do. Allow people to make their own choices while providing affordances for specific activities.

3 equipment that can be borrowed

As the use of open space often requires small equipment, provide equipment that can be borrowed so people, especially children and teens from lower socioeconomic areas, have access and use the spaces. It may also encourage impromptu use when passing by as there is no need to bring along equipment. Storage solutions can be designed based on the site needs.





*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none">Are the off-leash areas located along a walking loop or trail?Are there convenient walking paths leading to the off-leash area?Are entrances to dog off-leash areas clearly marked and accessible?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none">Does the area have good grass coverage without major bare spots or holes?Are there bins and poop bags located in convenient spots?Is the area kept neat and trash free?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none">Is there shade present in different sections?Is there a shelter to get out of the rain?Are trees and shrubs present to help with cooling from evapotranspiration and shade?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
04	<ul style="list-style-type: none">Are there design elements to attract children?Are there cues to indicate proper dog handling and safety precautions?Are there jumps or games that children can do with their dogs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the dog off-leash area recommendations on page 72

DOG OFF-LEASH AREAS

design ideas

1 non-fenced dog off-leash areas

The ideal setting for non-fenced dog off-leash areas is a park that has a long stretch for walking. However, this is likely only possible in large spaces that do not conflict with other uses or risk off-leash dogs wandering into other activity areas. A non-fenced area can be appealing when it affords access to streams and water areas. These types of off-leash areas could allow people to walk longer distances and explore different spaces.



2 signage and design elements to show distances and encourage people to walk to and around the off-leash area

Signage could show the distances between the dog park and other areas within the park to encourage people to walk their dog to the park. Include a pathway to encourage dog owners to do laps around the dog area. Install exercise equipment within dog off-leash area, but fenced or separated so as not to be damaged by dogs.



3 games and activities for people within dog off-leash area

Installing large games, such as chess, be fun for people of all ages. Agility activities might get people to be active with their dog, with signage to encourage this. Games can be enjoyed by all ages and can promote intergenerational connection.

4 nature experiences in the dog off-leash area

Incorporate nature and views of nature to enable dog owners to enjoy their time in the dog off-leash area. Unlike walking along a pathway where the environment changes whilst moving along it, off-leash dog areas are placed within one spot. Therefore, it is important to ensure that the environment surrounding (and within) the dog park is enjoyable for people to want to return.





OUTDOOR EXERCISE AREAS design checklist

*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none"> Is the exercise area visible from many areas of the park? Is the exercise area location along an accessible pathway? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none"> Is the exercise area shaded throughout the day? Are light surfaces and reflective materials used that don't absorb heat? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none"> Does the exercise area and equipment enable multiple physical abilities and skill levels? Does the exercise area and equipment allow for varying fitness levels? Is it designed to be inclusive for children and older adults? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
04	<ul style="list-style-type: none"> Are there elements of playfulness throughout the design? Is sufficient signage provided to prompt appropriate use? Are the colours and materials fun and motivating? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
05	<ul style="list-style-type: none"> Is there space within or near the exercise area designated for children to play or engage in activities and/or games? Can some of the equipment be used safely by children? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the outdoor exercise area recommendations on page 82

OUTDOOR EXERCISE AREAS

design ideas

1 multi-use park elements or exercise equipment

Outdoor exercise areas are often designed with equipment for a specific exercise and thus a very prescriptive use. Providing flexible elements that can be used for a variety of different movements can broaden the appeal and be more inclusive of people with a variety of physical abilities and ages. Simple elements such as poles, flat backless benches and balance beams or logs can afford multiple movements for different park users. Suggestions for use presented on a sign would be beneficial to provide clear affordances. People can also be encouraged to bring their own equipment, like ropes and bands, to attach to the permanent park elements.



2 equipment that affords gentle movements for all abilities

Exercise equipment is often designed for “fit” people, who may be more likely to exercise in a gym or with a personal trainer. Adults who are walking in a park or are there to watch their children or grandchildren, might not have a high level of physical fitness. Providing exercise areas with equipment that requires lower physical exertion, including gentle movements like balancing, bending and stretching, may be more inclusive for all physical abilities.



3 programmed activities in or near outdoor exercise areas

Activate outdoor exercise areas by promoting bootcamps or personal trainers to use them. This would ensure use of the equipment or zone during the programmed sessions, and attendees could be encouraged to use the exercise zones in the future on their own. Seeing people use the equipment may encourage others to also use it. Programming could be targeted at different ability levels and different age groups to allow a wide variety of people to obtain the knowledge of how to use the equipment. This broadened usage could also promote intergenerational physical activity.



4 play elements to engage children within an outdoor exercise area

Consider incorporating play elements amongst the exercise equipment for children to explore and keep them entertained and moving alongside their caregivers. Children are often active when they are playing, and as they often copy and mimic adults, play elements could allow them to mimic their caregivers' exercise movements. Elements that are novel and fun for children could include a spinner wheel that lists exercise activities (or tasks) that adults or children need to do as it lands on the selections. Simple painted lines or game boards on the ground can afford opportunities for hopscotch. These types of fun games can promote intergenerational physical activity, and keep children involved as adults exercise.



5 placement within the park

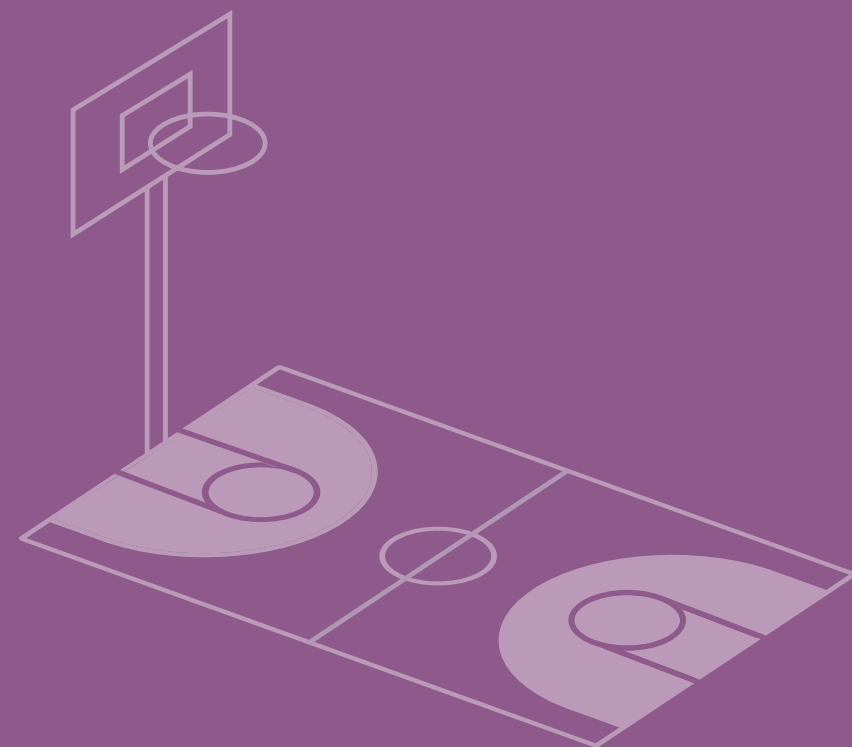
Where the outdoor exercise equipment is situated within the context of the whole park is important. It is noted that having the perception that people could be watching is off-putting for many, especially those who are not confident in their ability levels or knowledge of how to use the equipment. However, placing the outdoor exercise equipment near or adjacent to other activity areas that are being used by others (e.g., near skate park so children may skate while parent exercises) can be appealing and promote intergenerational physical activity.



6 Include exercise equipment designed for use specifically by children

Although children do not need specific exercise equipment in a park, they are often intrigued by it and like to try out the adult equipment. Including equipment that is designed for children or can be easily be adapted to a child's size and strength, could give them activities while adults also exercise. Ninja-style equipment that can be used by children enables multiple age groups to use it. It could also afford fun competitions between different age groups, which would promote intergenerational physical activity.





OTHER ACTIVITY AREAS design checklist



BASKETBALL COURTS

*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none"> Is the basketball court designed for varying heights, appropriate for children and youth? Are kid-friendly design elements and styles used? Are spaces provided for youth to socialise near the basketball court? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none"> Are other games accommodated or programmed on the court? Is equipment provided to participate in other activities? Are there hours of use for basketball only? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none"> Are the basketball courts visible from the street or adjacent roads? Are they located adjacent to other complementary areas? Are the courts located away from sensitive areas where noise may be an issue? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the basketball court recommendations on page 92

COMMUNITY GARDENS

*recommendation	checklist questions	N/A	not at all	partial	exceeds
01	<ul style="list-style-type: none"> Are there tasks afford in the garden that appeal to both novice and expert gardeners? Are different movements, such as pushing, pulling, digging, and kneeling afforded? Can moderate to vigorous movements be undertaken within the garden? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02	<ul style="list-style-type: none"> Are the garden beds designed so that more than one person can work in them? Are intergenerational activities encouraged through signage or programmed events? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03	<ul style="list-style-type: none"> Are the garden beds designed at multiple heights and widths to accommodate children (or people with limited mobility)? Can prompts be included through signage or design elements that suggest garden-based learning activities for children? 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Refer to the community gardens recommendations on page 92



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research program details

Twelve parks within Moreton Bay Regional Council in South-East Queensland, Australia, were selected as the focus parks of the project. The parks were selected to ensure a cross-section of park users was reached, based on three criteria: geographical area, park classification, and age of park equipment. All parks had at least one playground and field area. A mixed-methods approach of park audits, intercept interviews, and systematic observation of park users' physical activity levels were undertaken in Phase I. Within Phase II community members completed a brief interview and park preferences through a photo-choice tool whilst visiting one of six mid-sized shopping centres within Moreton Bay Regional Council.



PHASE I - within parks and with park users

The intercept interviews with park users included questions aimed at identifying adults' motivations for visiting the park, their perceptions of the park design and physical activity opportunities, and intergenerational interactions within the park setting. The intercept interview comprised five sections; the park users were asked questions about their park visitation, perceptions of the park design, physical activity opportunities (affordances) at the park, intergenerational interaction at the park, and demographics. The face-to-face intercept interviews over a four-month period during the Australian summer months. Each park was visited on four days (two weekdays and two weekend days), between 7:00 a.m. and 6:30 p.m., except for one park that was visited on three days.

[Phase I Intercept Interviews = **data source 1**]

Physical activity behaviour was captured using the System for Observing Play and Recreation in Communities (SOPARC; McKenzie et al., 2006). SOPARC is a behavioural observation tool used to identify physical activity levels and their contexts in community settings. SOPARC is one of the most prevalently utilised tools for assessing physical activity in community settings and a modified SOPARC protocol was used for this project. For the 12 parks, a map of the overall park was divided into zones, each with a designated observation point. Observations were undertaken on 4 days at each park (2 weekdays and 2 weekend days). The following modifications were implemented:

- Scan times were modified due to the climate; 7:00 – 8:00; 9:00 – 10:00; 15:30 – 16:30; & 17:30 – 18:30. Summer in South East Queensland is hot and humid, park visitation during the middle of the day is typically very low.
- Observations for physical activity included an additional activity type of 'Standing', (thus there were four levels (Sedentary, Standing, Walking, and Vigorous)).
- An additional scan for Intergenerational Interaction was included. Interaction type categories were talking, physical contact, and co-participation.

[Phase I SOPARC observations = **data source 2**]

PHASE II - park preferences with community members

The community members (who may or may not have utilized parks within the region) were interviewed to identify park use in the area, barriers to park use, and better understand park preferences. Interview items included demographic questions. The participants were also asked if they had visited one of the 12 target parks within the broader research project within the last 12 months, and if not if they had visited any parks. The community members were asked about the key reasons they visited the identified park, who they typically visited that park with, and to rate their perception of the opportunities for being active there for (1) kids, (2) adults, and (3) older adults. All participants were also asked four questions about their current physical activity, including whether they participated in any physical activity in a park.

[Phase II interview = **data source 3**]

A photo-choice tool was utilised to identify park preferences of community members. A selection of photos of park scenes were used to identify the participants' preferences for what would attract them to a park and would enable them to be physically active. There were 32 photos used, with a range of dominant features (15 physical features) including pathways, playgrounds, open spaces, dog parks, and basketball courts. The participants were presented with eight screens showing four photos each, and instructed to: "select the scenario most likely to get you to go to a park to be active" After each selection the participants provided a response to the question: "why did you choose that scenario?" The participants were also asked to indicate who would be active in the park scene.

[Phase II photo-choice tool = **data source 4**]

data source 1:**INTERCEPT INTERVIEW ADMINISTERED BY RESEARCH ASSISTANTS IN THE 12 PARKS****PARK VISITATION QUESTIONS**

1. Are you visiting the park:

- | | |
|---|--|
| <input type="checkbox"/> By yourself | <input type="checkbox"/> In a group of 6 – 10 people |
| <input type="checkbox"/> With another person | <input type="checkbox"/> In a group of > 10 people |
| <input type="checkbox"/> In a group of 3 – 5 people | |

2. Are you here with kids?

- ☐ No
☐ Yes

3. How often do you visit this park?

- | | |
|--|---|
| <input type="checkbox"/> Daily | <input type="checkbox"/> Every few months |
| <input type="checkbox"/> Few days/week | <input type="checkbox"/> Twice per year |
| <input type="checkbox"/> Weekly | <input type="checkbox"/> Yearly |
| <input type="checkbox"/> Fortnightly | <input type="checkbox"/> < Once per year |
| <input type="checkbox"/> Monthly | <input type="checkbox"/> First time here |

4. What mode of transportation did you use to get here today?

- | | |
|--|---|
| <input type="checkbox"/> Walk | <input type="checkbox"/> Taxi / Uber |
| <input type="checkbox"/> Cycle | <input type="checkbox"/> Private Bus |
| <input type="checkbox"/> Jog / Run | <input type="checkbox"/> Council Bus |
| <input type="checkbox"/> Wheelchair | <input type="checkbox"/> Train |
| <input type="checkbox"/> Skate / Rollerblade / Scooter | <input type="checkbox"/> City cat / Ferry |
| <input type="checkbox"/> Motor Vehicle | <input type="checkbox"/> Other: _____ |

5. How far did you travel to get here today?

_____ km and / or _____ metres other info: _____

6. Approximately, how long will you stay in the park today?

- | | |
|---|--------------------------------------|
| <input type="checkbox"/> <30 mins | <input type="checkbox"/> 2 – 4 hours |
| <input type="checkbox"/> 30 mins – 1 hour | <input type="checkbox"/> > 4 hours |
| <input type="checkbox"/> 1 – 2 hours | |

7. How did you first come to know of the park?

- | | |
|--|--|
| <input type="checkbox"/> Local knowledge | <input type="checkbox"/> Media |
| <input type="checkbox"/> Going past | <input type="checkbox"/> Internet |
| <input type="checkbox"/> Community event | <input type="checkbox"/> Word of mouth |
| <input type="checkbox"/> Sport club activity | <input type="checkbox"/> Map |
| <input type="checkbox"/> Other club activity | <input type="checkbox"/> Other: _____ |

8. What are your main reasons for visiting this park today?

- | | |
|---|---|
| <input type="checkbox"/> Children's play / playground | <input type="checkbox"/> Other exercise (specify) |
| <input type="checkbox"/> Walk | <input type="checkbox"/> Play / train for sport |
| <input type="checkbox"/> Cycle | <input type="checkbox"/> Fly kite |
| <input type="checkbox"/> Jog / Run | <input type="checkbox"/> Dog exercise / recreation |
| <input type="checkbox"/> Martial Arts / Thai Chi | <input type="checkbox"/> Fish |
| <input type="checkbox"/> Hike / Bushwalk | <input type="checkbox"/> Swim |
| <input type="checkbox"/> Skateboard / Rollerblade (specify) | <input type="checkbox"/> Beach activities |
| <input type="checkbox"/> Play basketball | <input type="checkbox"/> Aquatic activities (specify) |
| <input type="checkbox"/> Play football / soccer | <input type="checkbox"/> Meet friends / Socialise |
| <input type="checkbox"/> Play cricket | <input type="checkbox"/> Visit café / restaurant |
| <input type="checkbox"/> Picnic / BBQ | <input type="checkbox"/> Relax |
| <input type="checkbox"/> Spend time with children / family | <input type="checkbox"/> Enjoy natural environment |
| <input type="checkbox"/> Toilet availability | <input type="checkbox"/> Enjoy weather |
| <input type="checkbox"/> Routine | <input type="checkbox"/> Sightsee |
| <input type="checkbox"/> Happened to be in the area | <input type="checkbox"/> Be alone / Enjoy peace and quiet |
| <input type="checkbox"/> Visit markets | <input type="checkbox"/> Feed ducks / birds |
| <input type="checkbox"/> Community event (specify) | <input type="checkbox"/> Watch wildlife |
| <input type="checkbox"/> Community program (specify) | <input type="checkbox"/> Take photos |
| <input type="checkbox"/> Vocational purposes (work) | <input type="checkbox"/> Passing through the park |
| <input type="checkbox"/> Use open area / space | <input type="checkbox"/> Read / study |
| <input type="checkbox"/> Take a break / meal break | <input type="checkbox"/> Meditate / spiritual practices |
| <input type="checkbox"/> Sunbathe | <input type="checkbox"/> Specify: _____ |

9. Did you bring any play or exercise equipment with you to this park today?

- | | |
|---|--|
| <input type="checkbox"/> Soccer ball | <input type="checkbox"/> Bike |
| <input type="checkbox"/> Football | <input type="checkbox"/> Scooter |
| <input type="checkbox"/> Basketball | <input type="checkbox"/> Skipping rope |
| <input type="checkbox"/> Netball | <input type="checkbox"/> Frisbees |
| <input type="checkbox"/> Cricket ball and bat | <input type="checkbox"/> Kite |
| <input type="checkbox"/> Handball | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Other ball | <input type="checkbox"/> NO |

PERCEPTIONS OF THE PARK DESIGN

10. Thinking about the design of this park in terms of size, layout, and appearance, how satisfied are you with the design of this park? And why?

☐ Very Dissatisfied
 ☐ Moderately Dissatisfied
 ☐ Neutral
 ☐ Moderately Satisfied
 ☐ Very Satisfied
 ☐ Unsure

Why? _____

11. Thinking about the amenities in this park, such as seats, water fountains, and toilets, how satisfied are you with the amenities at this park? And why?

☐ Very Dissatisfied
 ☐ Moderately Dissatisfied
 ☐ Neutral
 ☐ Moderately Satisfied
 ☐ Very Satisfied
 ☐ Unsure

Why? _____

12. Is there anything you would change about this park?

13. Do you have a preferred park?

- ☐ Yes Park name: _____
☐ No

14. Why is that your preferred park?

PERCEPTIONS OF PHYSICAL ACTIVITY

15. In which area of the park are you most active?

- | | |
|---|--|
| <input type="checkbox"/> Playground equipment | <input type="checkbox"/> Swimming pool |
| <input type="checkbox"/> Sports / Grass fields | <input type="checkbox"/> Recreation centre |
| <input type="checkbox"/> Basketball / netball court | <input type="checkbox"/> Sand pit |
| <input type="checkbox"/> Walking / cycling track | <input type="checkbox"/> Boardwalk |
| <input type="checkbox"/> Skate park | <input type="checkbox"/> Water park |
| <input type="checkbox"/> Fitness equipment | <input type="checkbox"/> Not active |
| <input type="checkbox"/> Dog park / off leash area | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Tennis court | |

16. In which area of the park are your child/ren most active?

- | | |
|---|--|
| <input type="checkbox"/> Playground equipment | <input type="checkbox"/> Swimming pool |
| <input type="checkbox"/> Sports / Grass fields | <input type="checkbox"/> Recreation centre |
| <input type="checkbox"/> Basketball / netball court | <input type="checkbox"/> Sand pit |
| <input type="checkbox"/> Walking / cycling track | <input type="checkbox"/> Boardwalk |
| <input type="checkbox"/> Skate park | <input type="checkbox"/> Water park |
| <input type="checkbox"/> Fitness equipment | <input type="checkbox"/> Not active |
| <input type="checkbox"/> Dog park / off leash area | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Tennis court | |

17. What is it about this/these areas that allow for greater physical activity?

INTERGENERATIONAL INTERACTION

(For park users with children)

18. When at the park with your child/ren, is your visit typically a time when you play together or do you mostly watch them? Please describe...

19. When at the park, who decides what activities you and your child/ren will do? Please describe...

20. Have you taught or demonstrated any physical skills to your child/ren when visiting this park? (e.g., how to kick a football, or how to swing on their own) Please describe...

YOUR PHYSICAL ACTIVITY

21. How many times a week do you usually do 10 minutes or more of walking (e.g., walking from place to place for exercise, leisure or recreation)

- | | |
|---|---|
| <input type="checkbox"/> 5 or more times a week | <input type="checkbox"/> 1-2 times a week |
| <input type="checkbox"/> 3-4 times a week | <input type="checkbox"/> none |

22. How many times a week do you usually do 30 minutes or more of walking (e.g., walking from place to place for exercise, leisure or recreation)

- | | |
|---|---|
| <input type="checkbox"/> 5 or more times a week | <input type="checkbox"/> 1-2 times a week |
| <input type="checkbox"/> 3-4 times a week | <input type="checkbox"/> none |

23. How many times a week do you usually do 30 minutes or more of moderate-intensity physical activity that increases your heart rate or makes you breathe harder than normal? (e.g., carrying light loads, bicycling at a regular pace, or doubles tennis)

- ☐ 5 or more times a week ☐ 1-2 times a week
☐ 3-4 times a week ☐ none

24. How many times a week do you usually do 20 minutes or more of vigorous-intensity physical activity that makes you pant? (e.g., heavy lifting, digging, jogging, aerobics, or fast bicycling)

- ☐ 3 or more times a week
☐ 1 to 2 times a week
☐ none

DEMOGRAPHICS

25. Which age category do you fall into?

- ☐ 18 – 24 yrs ☐ 50 – 54 yrs
☐ 25 – 29 yrs ☐ 55 – 59 yrs
☐ 30 – 34 yrs ☐ 60 – 64 yrs
☐ 35 – 39 yrs ☐ 65 – 69 yrs
☐ 40 – 44 yrs ☐ 70 – 74 yrs
☐ 45 – 49 yrs ☐ 75+ yrs

26. What is your gender?

- ☐ Female
☐ Male
☐ Other

27. Which age categories do the child/ren fall into (Please indicate the number of children in each age group):

Boys: 0-5 yrs: _____ Girls: 0-5 yrs: _____
 Boys: 6-12 yrs: _____ Girls: 6-12 yrs: _____
 Boys: 13-18 yrs: _____ Girls: 13-18 yrs: _____

data source 2:

SOPARC (SYSTEM FOR OBSERVING PLAY AND RECREATION IN COMMUNITIES) USED FOR BEHAVIOUR OBSERVATIONS IN THE 12 PARKS

This resource is provided by Active Living Research and can be sourced from:

<https://activelivingresearch.org/soparc-system-observing-play-and-recreation-communities>

The following modifications to the SOPARC protocol were implemented:

- Scan times were modified due to the climate: 7:00 – 8:00; 9:00 – 10:00; 15:30 – 16:30; & 17:30 – 18:30. Summer in South East Queensland is hot and humid, park visitation during the middle of the day is typically very low.
- Observations for physical activity included an additional activity type of 'Standing', thus there were four levels (Sedentary, Standing, Walking, and Vigorous).
- An additional scan for Intergenerational Interaction was included. The three interaction type categories were talking, physical contact, and co-participation.

data source 3:**INTERVIEW WITH COMMUNITY MEMBERS ADMINISTERED IN SHOPPING CENTRES****INITIAL QUESTIONS**

Do you live in the local area?

- No - thank the person for their time and move on to the next person.
- Yes - continue to following question.

Have you been to *Park 1* or *Park 2* within the last 12 months?

- Yes [participant provided with Sections 1, 3, & 4]
- No [participant provided with Sections 1, 2, & 4]

SECTION 1: DEMOGRAPHICS

1. Do you own a dog?

- ☐ Yes
☐ No

2. Do you have any children or grandchildren?

- ☐ Children, ages? _____
☐ Grandchildren, ages? _____
☐ No

3. Which age category do you fall into?

- | | |
|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> 18 – 24 yrs | <input type="checkbox"/> 50 – 54 yrs |
| <input type="checkbox"/> 25 – 29 yrs | <input type="checkbox"/> 55 – 59 yrs |
| <input type="checkbox"/> 30 – 34 yrs | <input type="checkbox"/> 60 – 64 yrs |
| <input type="checkbox"/> 35 – 39 yrs | <input type="checkbox"/> 65 – 69 yrs |
| <input type="checkbox"/> 40 – 44 yrs | <input type="checkbox"/> 70 – 74 yrs |
| <input type="checkbox"/> 45 – 49 yrs | <input type="checkbox"/> 75+ yrs |
| | <input type="checkbox"/> Not given |

4. What is your gender?

- ☐ Female
☐ Male
☐ Other: _____

5. What is your current marital status?

- | | |
|---|---|
| <input type="checkbox"/> Single | <input type="checkbox"/> Divorced / Separated |
| <input type="checkbox"/> Married / De facto | <input type="checkbox"/> Widowed |

6. What is your highest level of education?

- | | |
|---|---|
| <input type="checkbox"/> Junior Certificate | <input type="checkbox"/> Degree |
| <input type="checkbox"/> Senior Certificate | <input type="checkbox"/> Honours Degree |
| <input type="checkbox"/> Diploma | <input type="checkbox"/> Masters or PhD |

7. What is your current employment status?

- | | |
|------------------------------------|--|
| <input type="checkbox"/> Full-time | <input type="checkbox"/> Student |
| <input type="checkbox"/> Part-time | <input type="checkbox"/> Primary Carer |
| <input type="checkbox"/> Casual | <input type="checkbox"/> Unemployed / between jobs |
| <input type="checkbox"/> Volunteer | |

8. What is your postcode? _____

SECTION 2: PARK QUESTIONS – NON-USER

9. What are the reasons that you have not gone to *Park 1* or *Park 2* within the last 12 months?

- | | |
|--|--|
| <input type="checkbox"/> Lack of knowledge about park <ul style="list-style-type: none"> • Unaware of presence of the park • Unaware of facilities present • Unaware of quality of facilities | <input type="checkbox"/> Safety concerns <ul style="list-style-type: none"> • On a busy road • Not well lit • Neighbourhood concerns • Vandalism • Drug paraphernalia |
| <input type="checkbox"/> Lack of time <ul style="list-style-type: none"> • Work commitments • Study commitments • Family commitments • Leisure-time commitments | <input type="checkbox"/> Prefer other park/s <ul style="list-style-type: none"> • You prefer • Child/ren prefer • Other family prefer • Friends prefer |
| <input type="checkbox"/> Poor design of park <ul style="list-style-type: none"> • Lack of facilities • Lack of activities for all ages • Lack of space • Lack of shade • Lack of greenery • Not fenced • Dislike ground covering • Activity areas too close together • Activity areas too far apart • Poor visibility • Poor accessibility (e.g., transport, parking) | <input type="checkbox"/> Lack of interest in visiting park <ul style="list-style-type: none"> • No reason to go there • Children are grown • Too quiet • Too busy • Dislike nature / outdoors |
| <input type="checkbox"/> Poor maintenance of park <ul style="list-style-type: none"> • Too much rubbish • Poor quality of facilities • Unkept greenery | <input type="checkbox"/> Lack of good weather <ul style="list-style-type: none"> • Rain • Sun • Wind • Cold |
| | <input type="checkbox"/> Lack of people to go with |
| | <input type="checkbox"/> Health concerns |
| | <input type="checkbox"/> Too far away from home |
| | <input type="checkbox"/> Other / Further description: _____ |

10. Are there any parks in Moreton Bay or the surrounding region that you have visited in the last 12 months?

- ☐ No [go to 10a]
☐ Yes [go to 10b]

10a. Why haven't you visited any parks? _____ [go to Section 4]

10b. Which park have you visited most often?

Name: _____ Suburb: _____ Description: _____
 (not all fields need to be completed)

11. What are the key reasons that you go to that park? _____

12. With whom do you most often go to the park?

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Your child/ren | <input type="checkbox"/> Friends |
| <input type="checkbox"/> Grandchild/ren | <input type="checkbox"/> Dog |
| <input type="checkbox"/> Other child/ren | <input type="checkbox"/> Alone |
| <input type="checkbox"/> Partner | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Parents | |

13. Based on the overall design and the features of this park, what opportunities for being active does this park include, on a scale from "no opportunities" to "lots of opportunities"?

For Kids |-----|-----|-----|-----|

For Adults |-----|-----|-----|-----|

For Older Adults |-----|-----|-----|-----|

SECTION 3: PARK QUESTIONS - USER

14. What are the key reasons you went to that park? (i.e., the target park)

15. With whom do you most often go to the park?

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Your child/ren | <input type="checkbox"/> Friends |
| <input type="checkbox"/> Grandchild/ren | <input type="checkbox"/> Dog |
| <input type="checkbox"/> Other child/ren | <input type="checkbox"/> Alone |
| <input type="checkbox"/> Partner | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Parents | |

16. Based on the overall design and the features of this park, what opportunities for being active does this park include, on a scale from "no opportunities" to "lots of opportunities"?

For Kids |-----|-----|-----|-----|

For Adults |-----|-----|-----|-----|

For Older Adults |-----|-----|-----|-----|

SECTION 4: CURRENT PHYSICAL ACTIVITY

17. In the past week, on how many days did you do moderate (i.e., continuous activity without losing your breath) to vigorous physical activity (i.e., activity that makes you puff and breathe harder), for at least 30 minutes?

- | | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> No days | <input type="checkbox"/> 5 – 6 days |
| <input type="checkbox"/> 1 – 2 days | <input type="checkbox"/> Everyday |
| <input type="checkbox"/> 3 – 4 days | <input type="checkbox"/> Unsure |

18. Which activities did you partake in?

- | | |
|--|---|
| <input type="checkbox"/> Walking for exercise | <input type="checkbox"/> Golf |
| <input type="checkbox"/> Dog walking | <input type="checkbox"/> Cricket |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> Netball |
| <input type="checkbox"/> Going to the gym | <input type="checkbox"/> Basketball |
| <input type="checkbox"/> Weightlifting / resistance training | <input type="checkbox"/> Personal training / bootcamp |
| <input type="checkbox"/> Jogging / running | <input type="checkbox"/> CrossFit |
| <input type="checkbox"/> Yoga | <input type="checkbox"/> HIIT workout |
| <input type="checkbox"/> Pilates | <input type="checkbox"/> Rowing |
| <input type="checkbox"/> Dancing | <input type="checkbox"/> Surfing |
| <input type="checkbox"/> Cycling | <input type="checkbox"/> Youtube / Fitness App |
| <input type="checkbox"/> Tennis | <input type="checkbox"/> Other: _____ |

19. Do you do any physical activity in a park?

- ☐ No
☐ Yes, please describe: _____

data source 4:**PHOTO-CHOICE TOOL ADMINISTERED IMMEDIATELY AFTER INTERVIEW**

Participants were presented with eight screens with four photo choice options. They were allowed to only select one photo in response to the question:

"Select the scenario most likely to get you to a park to be active."

After each photo was selected, the following screen displayed their chosen photo and requested the following information:

"Why did you choose that scenario?" _____

"Who would be active?"

- | | |
|---|-----------------------------------|
| <input type="checkbox"/> Me (Participant) | <input type="checkbox"/> Parent/s |
| <input type="checkbox"/> Child/ren | <input type="checkbox"/> Dog |
| <input type="checkbox"/> Other adult | <input type="checkbox"/> Other |

The eight selection screens were:

