THOMPSON BERRILL
LANDSCAPE DESIGN

Expert Witness Statement
Planning Scheme Amendment C278

Sunlight to Public Parks

Open space planning

Prepared for the City of Melbourne on instruction from Kim Wood, Legal Counsel

Prepared by:

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Updated 19 February 2021

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A Details and experience

A1 Name and address

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A2 Qualifications and experience

A2.1 Qualification:

BA Landscape Architecture with Honours

A2.2 Affiliations:

Registered Landscape Architect with the Australian Institute of Landscape Architects

A2.3 Experience:

A2.3.1 I worked in a range of landscape architectural practices from 1986 to 1992 prior to establishing Thompson Berrill Landscape Design Pty Ltd (TBLD) with the other Director Glenn Berrill in 1992. As a Director of TBLD, I lead diverse open space planning and landscape design projects for local and state government agencies and for the private sector. These projects include open space strategies and open space assessments for activity centres and high density precincts. Other project experience has included landscape estate-wide landscape masterplanning for new residential communities in the urban growth areas, strategic waterway design and management plans, shared trail designs, coastal management plans and landscape masterplans and for a range of open space reserves including sites of environmental significance.

A2.3.2 Of specific relevance to this project, I led the TBLD project team that prepared the *City of Melbourne Open Space Strategy*, *2012*.

A3 Statement identifying the Experts area of expertise

A3.1 I have worked for 20 years specifically in the area of open space planning, leading the TBLD project team in the preparation of open space strategies. I recently prepared the Yarra Open Space Strategy 2020, Glen Eira Open Space Strategy Refresh 2020 and the background Technical Report for the City of Port Phillip Public Space Strategy in 2020.

A3.2 Other open space strategies I have prepared prior to 2020 include the City of Melbourne Open Space Strategy (2012), City of Whittlesea Open Space Strategy (2015), City of Maribyrnong Open Space Strategy (2014), City of Glen Eira Open Space Strategy (2014), Boroondara Open Space Strategy (2012), Moonee Valley Open Space Strategy (2009), Whitehorse Open Space Strategy (2007), Yarra Open Space Strategy (2006), Stonnington Open Space Strategy (2000), Mitchell Shire Recreation and Open Space Strategy (2000) and the Port Phillip Open Space Strategy (1998).

A3.3 Other open space planning work I have undertaken in relation to high density precincts includes Moonee Valley Racecourse Precinct, Fishermans Bend, Box Hill Metropolitan Activity Centre and the Caulfield Station Precinct (current).

A3.4 I have relied on my expertise in relation to open space planning over the past 20 years and more specifically, my experience working with the City of Melbourne. I have used this expertise to provide my opinion in relation to the importance of sunlight in parks in the City of Melbourne.

A4 Other significant contributors to the report

None

A5 Instructions that define the scope of this report

I have been instructed by Kim Wood, Legal Counsel at the City of Melbourne Andrews to cover the following scope in this report:

- Familiarise yourself with the Amendment, relevant submissions and officer recommended changes in response to submissions as per the 4 February 2020 Future Melbourne Committee management recommendations.
- State whether you are supportive of the Amendment.
- Prepare a report setting out your expert opinion in relation to open space planning.

This statement provides the context for why sunlight access to public open space during winter is important from an open space planning perspective. I was not involved in the preparation of the Amendment.

A6 Other tests or experiments on which this report is based

None.

A7 The facts, matters and all assumptions upon which this report proceeds

A7.1 I have been asked to familiarise myself with the Amendment, relevant submissions and officer recommended changes in response to submissions as per the 4 February 2020 Future Melbourne Committee management recommendations and state whether I am supportive of the Amendment.

A7.2 I have focussed on my area of expertise in relation to open space planning and why winter sunlight access to public open space is important.

A8 Reference documents and materials

A8.1 This report is based on review of the Amendment documentation and specifically:

Hodyl + Co, 2018 *Sunlight access to public parks modelling analysis report* prepared for the City of Melbourne February 2018

City of Melbourne *4 February 2020 Report to the Future Melbourne (Planning) Committee Planning Scheme Amendment C278 Sunlight to Public Parks*

Local Planning Policies - Clause 22.02 Sunlight to Public Spaces Exhibited Version Melbourne Planning Scheme

Overlays - Schedule 8 to Clause 43.02 Design and Development Overlay Exhibited Version Melbourne Planning Scheme

A8.2 Other references referred to during the preparation of this Statement includes:

.id Consulting (2019) *City of Melbourne Community Profile* accessed July 2019. https://profile.id.com.au/nwmphn/population?WebID=160

Australian Bureau of Statistics (2014) *Australian Health Survey: Biomedical Results for Nutrients Feature Article Vitamin D*

City of Melbourne (2017), *Daily Population Estimates and Forecasts*

Department of Human Services Victoria (2008) *Vitamin D and the Built Environment in Victoria*, prepared for the Victorian Government

National Institute of Health (201) *Circadian Rhythms*, prepared by the National Institute of General Medical Sciences

Nowson, C.A. et al (2012) *Vitamin D and health in adults in Australia and New Zealand: a position statement* Published in the Medical Journal Australia, Edition 196, 18 June 2012

Osteoporosis Australia (2012) *Vitamin D Consumer Guide*

Parliament of Victoria (2012) *Inquiry into Environmental Design and Public Health in Victoria Final Report,* Legislative Council Environment and Planning Reference Committee

Sydney Morning Herald, Article, 10 November 2016, *The sun matters more for mental health than we think*, by Susan Berry

Thompson Berrill Landscape Design Pty Ltd (2012) *City of Melbourne Open Space Strategy – Planning for future growth* prepared for the City of Melbourne in association with Environment & Land Management Pty Ltd and Professor Nigel Tapper

Thompson Berrill Landscape Design Pty Ltd (2012) *City of Melbourne Open Space Strategy Technical Report* prepared for the City of Melbourne in association with Environment & Land Management Pty Ltd and Professor Nigel Tapper

Townsend, M & Weerasuriya, R, (2010) *Beyond Blue to Green: The benefits of contact with nature for mental health and well-being* prepared for Beyond Blue Limited by Deakin University

Traynor, V, Fernandez, R & Caldwell, K (2013) *The effects of spending time in daylight on the psychosocial wellbeing of older people and family carers; a comprehensive systematic review protocol* Faculty of Science, Medicine and Health, University of Wollongong.

WHO Regional Office for Europe (2016) *Urban green spaces and health A review of evidence*

Winzenberg, T et al, University of Tasmania (2012) *Vitamin D and the musculoskeletal health of older adults,* article reprinted from Australian Family Physician, Vol 41, No. 3 March 2012

Young, Dr S.N (2007) *How to increase serotonin in the human brain without drugs*, published in the Journal of Psychiatry and Neuroscience, Nov 2007.

B Opinion

B1 Introduction

B1.1 The City of Melbourne is proposing to introduce a new Design and Development Overlay (DDO8) to protect sunlight access to all parks across the municipality (excluding the Hoddle Grid, Southbank and Docklands) and an updated Sunlight to Public Spaces Policy to reflect the revised policy position for public parks. The basis for the controls is described in the *Sunlight access to public parks modelling analysis report,* prepared for the City of Melbourne in February 2018 by Hodyl + Co.

B1.2 Of specific relevance to my opinion is that I led the consultant team that prepared the *City of Melbourne Open Space Strategy – Planning for future growth 2012 (2012 Strategy)*, and the *City of Melbourne Open Space Strategy Technical Report 2012 (2012 Strategy Technical Report)*.

B1.3 Section B of my statement covers the following:

- An overview of why open space is important to liveability.
- The role that sunlight access plays in open space amenity, particularly in winter.
- Research into the benefits and importance of winter sun exposure to community health and wellbeing.
- Whether the underpinning principle in Amendment C278 that all open space in the municipality is of equal importance in relation to sunlight access is valid in the context of other open space planning documents including the *City of Melbourne Open Space Strategy 2012* and *Open Space Strategies Planning Practice Note 70.*
- Whether the importance and value of open space is likely to increase over time as a result of emerging pressures such as population growth and demographic change.
- A review of the changes proposed by Council officers in their report dated 4 February 2020, Report to the Future Melbourne (Planning) Committee.

B1.4 Throughout my statement, I refer to parks as 'open space' which is consistent with the definition of public open space in the *City of Melbourne Open Space Strategy 2012 – Planning for future growth 2012* as follows

> '*All publicly owned land that is set aside primarily for recreation, nature conservation, passive outdoor enjoyment and public gatherings. This includes public parks, gardens, reserves, waterways, publicly owned forecourts and squares'.*

B1.5 The definition of open space specifically excludes other public spaces that are not reserved primarily for public park and recreation uses including streets and laneways.

B1.6 Please refer to Section C3 of this Statement for my opinion regarding the inclusion of parks in the exhibited Schedule 8 to Clause 43.02 Design and Development Overlay.

Photo 1 ***Treasury Gardens*** *Relaxing in sunlight at the end of winter, August (Source: TBLD)*

B2 The importance of open space to liveability

B2.1 The City of Melbourne is identified as one of the most liveable cities in the world, which is in part due to the iconic open spaces as described in the 2012 Strategy. The iconic spaces include the publicly owned major sporting venues including the Melbourne Cricket Ground and Melbourne Park, the extensive parkland system of Kings Domain and the Yarra River, the major public gardens including the Royal Botanic Gardens, Fitzroy Gardens and Carlton Gardens and the public squares including Federation Square. Visitors are drawn to these spaces for major festivals and events and also to soak up the atmosphere and character of Melbourne. For the local community who live and work in Melbourne these main iconic parks, gardens and plazas are important, however they also rely on and visit a network of open space near to where they live and work. These are not necessarily iconic open spaces but are important to the community as they use them on a regular basis.

Photo 2 ***Fitzroy Gardens*** *Informal exercise and social connectedness in open space in early spring, October (Source: TBLD)*

B2.2 Open space is one of the key reasons why people choose to live in the City of Melbourne. It is the inherent diversity of the different types, sizes and characters of open space that contributes to the vibrancy, accessibility and liveability of Melbourne.

B2.3 As part of preparing the Strategy, an open space survey was distributed by the City of Melbourne to all households with over 1,750 returned. The survey results are summarised in the *Research Report Household survey outcomes summary for the City of Melbourne Open Space Strategy, 2011* included as Appendix A in the 2012 Strategy Technical Report. The results indicated that the community visit different types of open space. The reasons given for visiting larger areas of open space include attending festivals and events, exercise, place to relax and unwind and to socialise. The main reason people visit smaller areas of open space is because they are close to their home or work.

B2.4 The smaller size of open space does not reduce its level of importance, as for many, they are the spaces that are more frequently visited because they are close to home or work. People lead busy lives and many have limited spare time, while other people cannot easily travel long distances to reach open space, including the elderly, young children and people with limited mobility. Therefore the Small Local open spaces are often the only open space that some of the community can easily reach.

Photo 3 ***Hawke and Adderley Street Park, West Melbourne*** *Small Local open space with open grassed area being well used in winter sunlight, June (Source: TBLD)*

B2.5 In addition to community use, a network of different types of quality open space supports a healthy natural environment that promotes connectivity and habitat for native fauna and flora.

B2.6 A distributed and well-designed system of open space assists to mitigate urban heat island effect and contribute to urban cooling. Key to this is the inclusion of appropriate green infrastructure that encourages permeable surfaces which hold moisture combined with large canopy trees to promote effective evapotranspiration in the evening to cool the local microclimate during periods of extended heat. Adequate sunlight is required to support the vegetation including mature canopy trees, garden beds and open grassed areas as green open spaces.

B2.7 Within the context of the recent experience in Melbourne of more than 100 days of 'lockdown' due to COVID 19 pandemic, the importance of public open space for community health and wellbeing was highlighted in the media. In planning for the future, the COVID 19 pandemic has reminded us of the importance of the provision of open space, and for it to be resilient and adaptable to respond to changing needs and unforeseen situations that will arise in the future.

B2.8 In summary, a healthy and robust public open space network contributes to the character, biodiversity, sustainability and liveability of the City of Melbourne.

B3 The benefits of sunlight access to open space

B3.1 The role of sunlight access in open space character and amenity

Appeal of open space

Photo 4 ***Lincoln Square, Carlton*** *Sunlight creates visual interest and character in open space, February (Source: TBLD)*

B3.1.1 Sunlight brightens the colours and the contrast in open space which makes it more attractive and appealing to use. The photo above illustrates the sunlight highlighting the decorative seed heads on the grasses in the garden bed as an example of this. The sunlight moving through the open space during the day can change the mood, function and character of the space which encourages people to visit it at different times of the day.

B3.1.2 During winter in Melbourne, being outdoors in open space can be cold and it is tempting to stay indoors given the cold weather. From a health and wellbeing point of view, it is better for us to spend some of the day outdoors in the fresh air at all times of the year where feasible/possible. Direct sunlight during winter warms the microclimate of the open space, making it more comfortable to visit and stay outdoors for longer. Spending more time in open space during the winter means that people benefit from the sun exposure including receiving adequate levels of sunlight to assist the body to produce Vitamin D along with other benefits provided by visiting open space, including being outdoors in the fresh air, fitness and taking a break from work which can lower people's stress levels during the day.

B3.1.3 People visit open space at different times of the day and is the reason that it is important to have sunlight in the park across those different times. For example, people who work may visit open space at lunchtime in the middle of the day, while students have more flexible hours and will use open space at different times across the day. Sunlight access to open space between 10am to 3pm allows a window of time for people to visit open space without concentrating the use into a shorter

space of time, where the quality of the experience of using open space can be compromised.

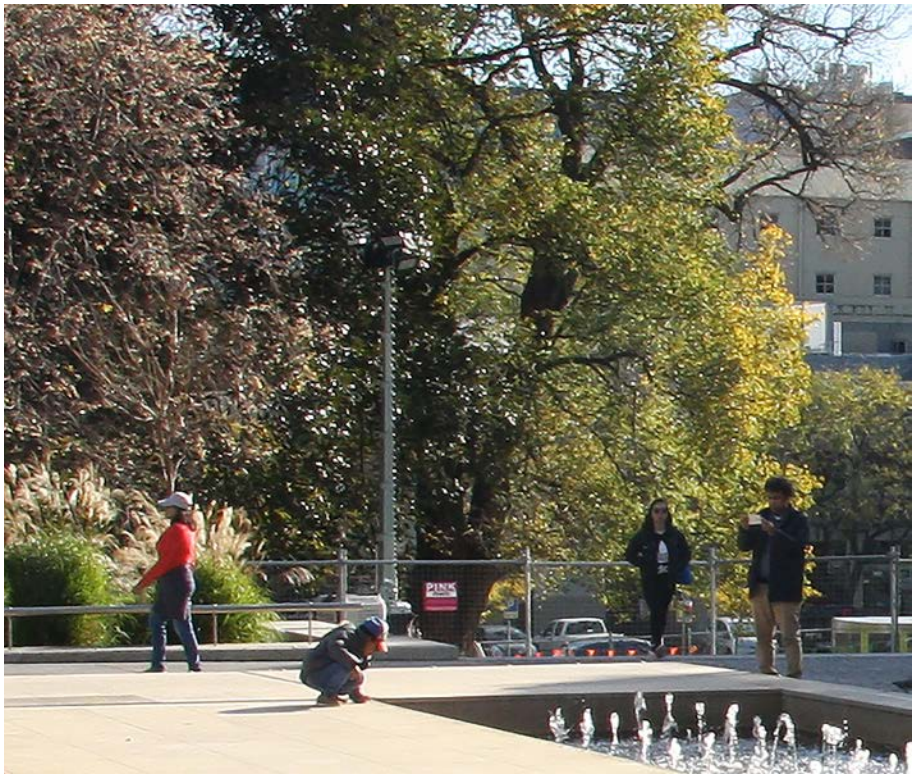


Photo 5 ***Lincoln Square, Carlton*** *Sunlight creates visual interest and character in open space. During winter people are enjoying the sunshine, June (Source: TBLD, June)*

Vegetation

B3.1.4 Maximising sunlight access assists to maintain healthy vegetation growth including grassed areas, making it more sustainable and realistic to manage these open spaces in the future with natural features and surfaces.

Photo 6 ***Lincoln Square, Carlton*** *Canopy cover and greening from mature trees, February (Source: TBLD)*

B3.1.5 Plants get their energy from the light through a process called photosynthesis. While the amount of light each plant needs varies, many of the robust species planted in open space need direct sunlight for healthy growth. One of the most valued and used features in open space is the open grassed areas for exercise, playing informal games, relaxing, picnics and enjoying the sun. 80 per cent of the 1,776 people who completed the household survey for the 2012 Strategy (Appendix A of the 2012 Strategy Technical Report) nominated they use open grassed areas. This is second only to walking paths (91 per cent) followed by seats (57 per cent). Grass needs good sunlight access to grow well. Given the trend towards lower rainfall and longer periods of dry weather as a result of climate change, Council has changed to warm season grasses which are more robust and will grow with lower levels of irrigation. This means their growth rate slows down significantly over winter. Direct sunlight to the grassed areas over winter will assist to retain a good level of cover for use during winter and will make it more robust to cope with higher levels of use from the forecast population growth.

B3.1.6 Large, broad spreading deciduous trees are the most well adapted to allowing sunlight access in during winter and providing much needed shade during summer. Many of the open spaces in Melbourne have a combination of the evergreen and deciduous trees which achieves improved sunlight access and also greening along with the other beneficial effects of the trees year round including filtering out particulates and a diversity of habitat. The density of the shade cast by trees varies with Eucalypts casting a less dense shade due to their narrow leaves that hang vertically, compared to deciduous trees. During summer, the preference is for the trees to cast dense shade to limit sunlight penetration. In winter, there is preference for excellent sunlight access which means that deciduous trees function the best, however some sunlight access still penetrates through Eucalypt style trees and provides some sunlight access in winter. The shade cast by trees is different from the solid shade or shadow from buildings. Building shadows block all sunlight in winter and summer and dappled shade is preferable.

Photo 7 & 8 ***Canning Street & Macaulay Road Reserve*** *Summer shade on the left in February and some winter sunlight access through the deciduous trees on the right in June (Source: TBLD)*

B3.1.7 Green open space with trees, garden beds and grass contribute to mitigating urban heat, through more effective evapotranspiration. This includes the presence of natural surfaces which increase the moisture holding capacity of the space when it rains, and allows for effective evapotranspiration by trees to cool the space. These moisture absorbing surfaces need sunlight in winter and summer to grow well and be functional and more easily maintained in winter. Without adequate winter sunlight, grass is difficult to grow and there is a preference to convert these areas to paved surfaces instead.

B3.1.8 The presence of natural features and greening in high density urban environments contributes to improving the mental health of the community. Research shows that people are able to relax more easily if they are in a natural green open space when compared to the absence of greening. The studies have measured the levels of anxiety in adults before and after visiting green open spaces and confirm there are lower levels of anxiety, sadness and stress after visiting open space (Townsend, M et al, 2010).

Photo 9 ***Fitzroy Gardens*** *Diversity of vegetation character and types provides visual interest and attracts people in to use open space, October (Source: TBLD)*

B3.1.9 While acknowledging that I am not a horticulturalist, generally a wider and more robust range of perennial plants will grow, including flowering plants, if there is good sunlight access in the winter. Plants that tolerate permanent shade in winter are limited in number. A wide diversity of plants in the urban environment contributes to the environmental values of the open space by providing habitat for birds, fauna and insects and also improves the attractiveness and appeal of the open space.

B3.2 Community health and wellbeing

Vitamin D

Photo 10 ***Carlton Gardens*** *Relaxing in open space in sunlight in spring, October (Source: TBLD)*

B3.2.1 The Australian Bureau of Statistics (ABS) Australian Health Survey (ABS, 2014) results identify that rates of Vitamin D deficiency during winter are particularly high for those living in the south eastern states of Australia including Victoria. According to the ABS survey, the Vitamin D deficiency rate during winter in Victoria is 49 per cent. During summer this reduces to 16 per cent due to the higher UV levels and shorter time that people need to be exposed to the sun to produce sufficient levels of Vitamin D.

B3.2.2 Osteoporosis Australia in their publication *'Vitamin D Consumer Guide'* notes that while everyone needs adequate levels of Vitamin D for their ongoing health and wellbeing, those most at risk of Vitamin D deficiency based on include:

- The elderly, particularly those living in residential care
- Darker skinned people as the darker pigment reduces penetration of UV light
- People who work indoors all day
- Those who need to avoid the sun for skin protection due to medical advice
- Those who cover their body for religious or cultural reasons
- Medical conditions that affect Vitamin D absorption.

Photo 11 ***Clayton Reserve*** *Access to winter sunlight in June (Source: TBLD)*

B3.2.3 The length of time of exposure to receive adequate levels of Vitamin D varies with the seasons, colour of the skin and time of the day. In Melbourne the following lengths of time of sun exposure as recommended in the *Vitamin D and Health in adults in Australia and New Zealand Position Statement 2012*, published in the Medical Journal of Australia (Nowsan, C.A et al, 2012) are:

Winter
Fair skin – approximately 25 mins per day on most days
Dark skin – approximately 90 mins to 150 mins per day on most days
Summer
Fair skin – approximately 6-8 mins per day on most days
Dark skin – approximately 20-50 mins per day on most days

B3.2.4 Too much exposure to sunlight can elevate the risk of skin cancer and therefore a balance of sun exposure to produce adequate amounts of Vitamin D while avoiding the risk of sun damage is required. During summer medical advice recommends avoiding the peak UV times of between 10am and 2pm for sun exposure (between 11am and 3pm during daylight saving time). However, according to Osteoporosis Australia, during winter in Melbourne, the UV Index is lower than 3 at all times, which means that the sunshine between 10am and 3pm is not harmful for most people. For reference, the UV Index increases from 4 in Spring through to 10 in Summer and down to 4 by April. Sun protection is recommended when the UV Index is 3 and above. The proposed 10am to 3pm timeframe for sunlight access to open space during winter maximises the window of opportunity for people of all ages and abilities to be outdoors in open space and exposed to adequate levels of winter sunlight.

Mental health

B3.2.5 Research indicates that exposure to sunlight is linked to elevating our mood and mental alertness by boosting the serotonin levels in our body. Serotonin is a chemical that our nerve cells produce that contributes to stabilising our moods and normal sleep patterns (Young, SN, 2007 and WHO, 2016). Young suggests that exposure to bright light and exercise assist the body to naturally increase the levels of serotonin. Young notes that only a few generations ago the majority of the world's population spent most of their time outdoors during the day in the bright sunlight. In cities, the majority of people now spend most of their time indoors away from natural bright sunlight. Young goes on to state that the research indicates that the lack of access to natural bright sunlight may be contributing to the rise in depression and sleeping disorders in urban populations.

B3.2.6 Traynor et al. from the University of Wollongong in their paper – *The effects of spending time in the daylight on the psychosocial wellbeing of older people and family carers,* indicates that natural daylight may be more beneficial to human health than artificial light. This is combined with the other benefits derived from the exposure to other natural elements such as fresh air and green space. The paper also refers to the ability of daylight to regulate the body's circadian rhythm. Circadian rhythms are physical, mental and behavioural changes that follow a daily cycle and respond primarily to light and darkness. Disruption to our circadian rhythm has been linked to chronic health conditions including sleep disorders, obesity, diabetes, depression, bipolar disorder and season affective disorder (Traynor et al, 2013).

Photo 12 ***Flagstaff Gardens, Central city*** *Informal ball sports during lunch time in winter, August (Source: TBLD)*

B3.2.7 As a summary, the research suggests that there are benefits for people to spend more time exercising outdoors during the day in the natural light to prevent depression, improve sleep patterns and also improve their general physical fitness as well. The provision of open space with good natural sunlight access, particularly in winter, will assist to encourage people outdoors. Being warmer in winter with direct sunlight access to improve thermal comfort will encourage people to stay longer outdoors.

B4 Open space hierarchy and sunlight access

B4.1 Role and purpose of the open space hierarchy

B4.1.1 The *Open Space Strategies Planning Practice Note 70, 2015* (Practice Note 70) describes the process for preparing an Open Space Strategy including suggested ways to classify open space. While the 2012 Strategy was prepared prior to this Practice Note 70, the framework for the Strategy is consistent with the Practice Note. The Practice Note 70 on page 4 states:

> *'A classification system generally covers the catchment (who will use the open space), landscape character (what the open space will look like) and function (the role of the open space), but can also include the settlement type (the environment the open space sits in). A classification system provides the framework for analysing the existing open space, potential future needs and determining the future open space requirements of the study area'.*

B4.1.2 The classification system in the 2012 Strategy comprises the 'open space hierarchy' and the 'character classification'. The open space hierarchy defines the catchment of users and the role of the open space. The character classification system defines the landscape character of each open space. The open space hierarchy is summarised in Table 1 below, and is taken from the 2012 Strategy Technical Report.

Table 1 Hierarchy of open space in the City of Melbourne

Travel/walking catchment & Size	Role
Capital City open space	
No specific travel catchment and with a with a 500 metre safe walking catchment for local use *Size: Unlimited*	Iconic open space that is primarily established and managed to stage activities and events of International, National, State and Metropolitan importance. These spaces are synonymous with the character of the City of Melbourne and provide facilities that are known by and primarily for visitors. Examples include Birrarung Marr, Carlton Gardens South, Domain Parklands, Fitzroy Gardens, Melbourne Park, MCG and Olympic Park, Royal Botanic Gardens and Yarra River banks through the Central City.
State open space	
No specific travel catchment and with a with a 500 metre safe walking catchment for local use *Size: Unlimited*	Primarily set aside and managed primarily for the whole of the State of Victoria. These spaces are not necessarily iconic or linked to the image of Melbourne. They include Royal Park, Yarra Park and Goschs Paddock.

Travel/walking catchment & Size	Role
Regional open space	
No specific travel catchment and with a 500 metre safe walking catchment for local use *Size: Unlimited*	Primary purpose is to provide for the Metropolitan Melbourne population as well as the local community. Generally these are easily accessible to people in adjoining municipalities and of regional recreational use and/or of regional conservation significance. Examples include Princes Park, Maribyrnong River, Moonee Ponds Creek, Fawkner Park, Carlton Gardens North and Westgate Park.
Municipal open space	
2 kilometres travel catchment and 500 metre safe walking catchment for local use *Size: Minimum 3 hectares*	Open space that is valued and visited primarily by the City of Melbourne population, providing facilities that include organised and unstructured sort and recreation activities. Examples include JJ Holland Park, North Melbourne Recreation Reserve and Powlett Reserve.
Neighbourhood open space	
500 metre safe walking catchment *Size: Minimum 1 hectare*	Provides a diversity of character and facilities that appeal to the local community at the neighbourhood level. There is a suitable range of facilities that encourages people to stay for a few hours. Examples include Argyle Square and North Melbourne Community Centre.
Local open space	
300 metre safe walking catchment *Size: Minimum of 0.26 hectares up to 0.99 hectares*	Primarily for the local community nearby their home/workplace and large enough to provide at least two activities in the one open space, for example a playground and open grassed area with seats. Examples include Clayton Reserve, Jolimont Reserve and MacArthur Square.
Small Local open space	
200 metre safe walking catchment *Size: Minimum of 0.03 hectares up to 0.25 hectares*	Primarily for the local community nearby their home/workplace and generally accommodates a single use, for example seating or play. Examples include Chapman Street Reserve, Golden Elm Reserve and Peppercorn Park
Small Local Link	
Not applicable *Size: Usually less than 0.03 hectares*	Primarily to provide improved connectivity between streets and open space. They generally have a path connection and grass or planting. Examples include Barring Walk and parts of the Stockyard route in Kensington.

B4.1.3 The open space hierarchy is used to identify who uses the open space and the purpose for which they use it. Assigning the hierarchy for each open space is influenced by a range of factors including its size, location, scale and type of facilities, adjoining uses and its urban context. The hierarchy provides Council and the community with a useful tool for understanding what type of facilities may be appropriate in the future for existing and proposed new open spaces. For example, Municipal open spaces have facilities that are appropriate for people visiting from

across the municipality. Municipal open space is usually the most appropriate location for new organised sporting facilities as they will have the other types of supporting facilities that cater to the use - for example existing sports pavilions, car parking, sports field lighting etc. There is an expectation from the community who live and work near a Municipal open space that these higher order facilities are provided there. This is in contrast to a Local open space, where the types of facilities are scaled down to meet the local community who live and work within a 300 metre walking catchment. This means that larger scale facilities such as car parking and sports pavilions are not located in them and the scale of proposed future facilities need to match the scale and visitor profile of the open space.

B4.1.4 The hierarchy assists Council and the community with determining appropriate changes in each open space in the future. All types of open space need winter sunlight for them to be attractive to visit, use and make a positive contribution to the health and wellbeing of the community. Whether it is training on the sports oval, playing informal games, socialising with friends or relaxing in the park - they are all activities that are more enjoyable and possible to participate in with good winter sunlight access to open space. From a health and wellbeing perspective, during winter everyone needs access to adequate levels of winter sunlight access, including in the local park near their house/workplace and in the major sporting reserve further away. As the author of the 2012 Strategy I can confirm that the open space hierarchy was not set up to guide different levels of winter sunlight access to public open space. Winter sunlight access to open space is important for all types of open space.

B4.1.5 The Neighbourhood, Local and Small Local open spaces are often the only open space that is located close to workers and residents, meaning they can easily and safely visit them. These spaces are the most accessible to the more vulnerable in the community including young children, older people and those with limited mobility. These groups typically rely on the open space nearest their home, workplace or school because they cannot easily and safely walk or travel to another open space further away. For older people, they need to spend a longer time in sunlight to maintain adequate levels of Vitamin D during the winter. In order to spend more time in open space in winter, it needs to be comfortable and with facilities suitable for them to spend time there. Direct sunlight in winter warms the space and also makes it visually more interesting by intensifying the colour and light making it more attractive to use and spend time in. Additionally, the smallest areas of open space will be at the greatest risk of partial overshadowing from built form during winter.

B4.1.6 While some open spaces have a broader catchment of users including international visitors to the State, Capital City and Regional open space, this does not mean that they need to receive more winter sunlight access than a Local or Small Local open space. This is because the more vulnerable in our community are often those who cannot easily travel further than a short walk to reach open space. If the local parks near their homes and workplaces are significantly overshadowed during winter, then it will limit winter sunlight access to those who need it most.

B4.1.7 All public open space irrespective of its role in the network needs winter sunlight to make it attractive to use, maximise its adaptability and function now and in the future and for it to be practical to maintain.

B4.2 Proposed five hours of direct sunlight in all open space

B4.2.1 The proposed timeframe of winter sunlight access being protected between 10am and 3pm on 21 June will provide a reasonable time period in which both the residential and worker communities can exercise and be outdoors in the direct sunlight in winter, which is the time of the year when they need it the most. While people won't necessarily visit the open space for this entire time, different parts of the community will use the open space at different times of the day. The 10am to 3pm time period will maximise accessibility for the community whether they are working full time, studying at university, looking after children, retired or working evenings and night shifts.

B4.2.2 The five hour period will increase the timeframe over which the open space will be attractive to use and spread the levels of use out to a wider window of time thereby increasing its capacity to accommodate everyone, particularly in the context of forecast growth. One of the key reasons to visit open space is to relax and unwind and enjoy the sense of space which is also often expressed as de-stressing during the day or after work. The quality of this experience is predicated on having a sense of space and also some quietness. If the park is too busy this sense of space and quiet cannot necessarily be achieved and hence the reason it is important to have the wider window of time for people to visit at different times.

B5 The increasing importance of winter sunlight in open space now and in the future

B5.1 Updated research and 3D modelling

B5.1.1 When I prepared the *City of Melbourne Open Space Strategy* from 2009 to 2012, some information regarding the importance of winter sunlight for people's health and wellbeing was available. However, there is now a more detailed understanding of the mental health benefits that access to winter sunlight provides. In 2012, the Parliament of Victoria *Inquiry into Environmental Design and Public Health in Victoria,* brought a substantial amount of the research material on this subject together.

B5.1.2 In 2012, the 3D model of the City of Melbourne was not available to assess the impact of winter sunlight controls on existing and future development. At that time there was wide industry acceptance of the equinox rather than the winter solstice being the measure of sunlight access. Therefore the 2012 Open Space Strategy included a minimum of 3 hours of winter sunlight protection and minimum of 5 hours of direct sunlight access at the equinox, as follows:

> *....a minimum of 3 hours of direct sunlight between 9am and 3pm during mid-winter and at least 5 hours of direct sunlight between 9am and 3pm on September 22.*

B5.1.3 Further research into the benefits of winter sunlight access to open space, combined with the recent impact of increased numbers of tall buildings overshadowing the open space, has increased the awareness and concern about overshadowing. The ability to undertake the 3D modelling to assess the extent of overshadowing of existing and proposed built form has been a critical part of Council being able to assess and determine a practical winter sunlight protection control for open space.

B5.1.4 During the COVID 19 pandemic the use of open space has changed with more people relying on open space to meet up with friends and families given the restrictions on the numbers of people gathering indoors. People have also increased their use of open space for exercise with limits on the ability for people to exercise indoors. While some of these needs are transient they do highlight the importance of factoring in future resilience and adaptability to open space as we cannot foresee all circumstances like what has just occurred with the pandemic. Minimising overshadowing of open space will maximise its adaptability in the future to accommodate changing needs and additional facilities or levels of use as required.

B5.2 Forecast future change

B5.2.1 Melbourne's population is forecast to continue to grow. The residential population is forecast to increase to approximately 2.5 times its existing size over the next 25 years, changing from 146,096 in 2016 to 384,024 in 2041 (.id Community Profile, population and household forecasts 2016 to 2041, prepared by .id the population experts, April 2019). The 2012 Strategy provides direction for the provision, design and management of open space in the context of forecast change through to 2026. Since the Strategy was prepared in 2012, population growth has occurred at approximately double the rate that was forecast at that time with an approximate average of 10,000 additional residents moving into the city a year rather than the forecast approximate average annual increase of 4,400.

B5.2.2 At the time the Strategy was prepared, the employment population was forecast to increase by nearly 40 per cent resulting in an additional 172,000 workers by 2026, taking the total worker population to just over 600,000. In 2019 the number of jobs increased by approximately 65,000 from 2011, changing from 432,500 to 497,200 in 2019 according to the *City of Melbourne CLUE Summary Report 2019*. On an average per annum rate this is a slower rate of growth than was forecast at the time the *City of Melbourne Open Space Strategy 2012* was prepared. However, it is noted that the same report shows a higher rate of growth between 2017 and 2019, which indicates that a worker population in the order of 600,000 as previously forecast is likely to occur.

B5.2.3 More people living and working in the city has increased the intensity of use of open space. At the same time increased urban densities and building heights has also caused more overshadowing of open space during winter. The impacts of the loss of direct sunlight access to open space during winter is more noticeable now.

B5.2.4 With less private open space available as a result of high density development, public open space is likely to be used for a greater number of reasons. While I have not had the opportunity to survey residents and workers in the City of Melbourne recently, I have had this opportunity in the adjoining City of Yarra. The reason this survey work is useful in the context of the City of Melbourne is that the Yarra community have experienced a significant amount of change from medium to high density development over the period of 2006 to 2020, which is similar to the urban context changes that the City of Melbourne has also experienced since the City of Melbourne Open Space Strategy was prepared.

B5.2.5 The surveys ask why an inner city community visit open space and what they value about it. The data relates to a comparison of survey results undertaken for the Yarra Open Space Strategy 2006 and those undertaken for the Yarra Open Space Strategy 2020. There are two key factors from the comparison of this survey data that is relevant to issues covered in this statement. The first is that the survey outcomes confirm that people do visit and use the small local open spaces near to where they live and work. This reinforces the reason why it is important to protect winter sunlight access in small open spaces as well as the major ones. The second is that it shows a change in why people go to open space and what they value about it as urban densities have increased.

B5.2.6 I have compared the results of the surveys undertaken in the suburb of Collingwood, as this has experienced a significant change in urban densities and building heights between 2006 and 2020. The survey respondents in 2020 nominate a greater diversity of reasons they visit open space compared to those who completed the survey in 2006 as shown in Table 2 below. The survey asked open ended questions, not multiple choice, so the responses are unprompted.

Table 2 Summary of comparative outcomes from the community surveys for the 2006 Strategy and the 2019 community survey

Open space name	Reasons to visit 2006*	Reasons to visit 2019*
Fitzroy Gardens	• Walking • Cycling	• Exercising • Green place • Close • Dog walking • Ambience/beauty • Peaceful • Relaxing • Trees • Open space • Meeting friends • Wellbeing
Darling Gardens	• Walking • Dog walking • Jogging	• Informal ball games • Convenient • Dog walking • Picnics • Play • Playground
Edinburgh Gardens	• Walking	• Dog walking • Nearby • Exercising • Informal ball games • Open/large space • Picnics • Meeting people/friends • Trees/beauty
Yarra Bend Park	• Walking	• Dog off leash areas • Jogging/running • Picnics • Relaxing • Walking

* *Open space within walking distance of home*

B5.2.7 Table 2 shows an increase in the diversity of reasons people visit larger areas open space, which includes for social contact and to relax and unwind. It is assumed that this diversity of reasons relates to people having less access to private open space and may also be due in part to increased community awareness of the importance of exercise and being outdoors to overall mental health and wellbeing.

B5.2.8 Since the 2006 Yarra Open Space Strategy was prepared, two new Small Local open spaces have been added to the open space network. The inclusion of the two Small Local open spaces in the survey results confirms that if Small Local open

spaces are provided near to where people live, they will use them instead of or in addition to the larger spaces.

B5.2.9 Given they were not there in 2006, there is no comparative data on the reasons they visit them. The diversity of reasons include for sunshine/Vitamin D along with a range of other reasons that are more enjoyable in the winter if the park is in sunlight and is warm and inviting to spend time in.

Table 3 Summary of reasons why people visit open space nearby in Collingwood in 2019 survey

Open space name	Reasons to visit 2019
Peel Street Park	• Nearby • Dog walking • Being outside • Dog friendly • Green place • Travel through • Lunch • Reading • Relaxing • Apartment living • Open space • Meeting friends • Sunshine/Vitamin D
Oxford Street Park	• Relaxing • Lunch • Close to home • Close to work • Travel through • Exercise • Fresh air • Meeting people/friends • Sunshine/Vitamin D • Walking

B5.2.10 The full reports on the open space survey outcomes for the Yarra Open Space Strategy 2006 and Yarra Open Space Strategy 2020 are available to the public on the City of Yarra website, via the two links included below:

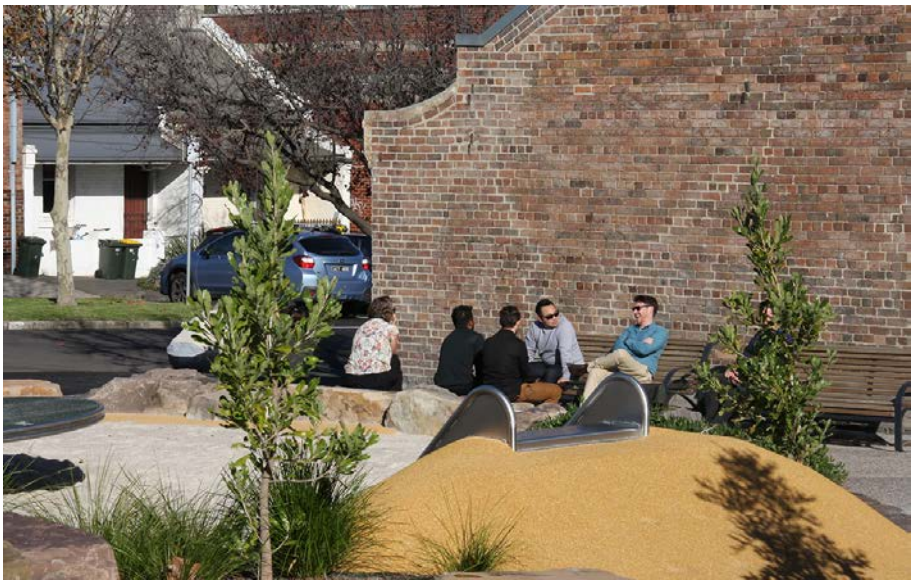
- This link is to the Yarra Open Space Strategy 2006 with the Community Survey results included as Appendix B at the end of the report: *https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.yrra-yoursay.files/1415/6024/9771/Open_Space_Strategy_adopted_2006.pdf*
- The link below is to the Draft Yarra Open Space Strategy 2019 Community engagement report, with the results of the 2019 community survey for Collingwood: *https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.yrra-yoursay.files/6815/7888/4692/Draft_Open_Space_Strategy_-_Consultation_Report.pdf*

B5.2.11 A household survey regarding which open spaces the community visit and the reasons they visit them was undertaken for the *City of Melbourne Open Space Strategy 2012* (Refer Appendix A of the Technical Report). The survey respondents included being in the sun as one of the reasons to visit open space for

Darling Square, Flagstaff Gardens, Carlton Gardens, Royal Botanic Gardens, Yarra Trail and the State Library of Victoria. Photo 13 is of the State Library of Victoria illustrating people using the sunny parts of the open space in spring. Photo 14 below that illustrates people enjoying winter sunlight.

Photo 13 ***State Library Forecourt*** *Relaxing in open space in sunlight early spring, with the shadow starting to be cast over the space and illustrating people enjoying the sunny parts of the space, October (Source: TBLD)*

B5.2.12 The photo below is of a recently upgraded Small Local open space in the West Melbourne illustrating people enjoying the park in the sunshine during winter. This photo illustrates people enjoying the perimeter of the park, and being comfortable to stay there. Please also refer to Photo 3 earlier in my statement illustrating the use of the perimeter of the other part of this Small local open space.



Photos 14 ***Hawke and Adderley Street Park, West Melbourne*** *In Small Local open spaces, the whole reserve including the perimeter is well used, particularly in the middle of winter when the sun is out, June (Source: TBLD)*

B5.2.13 With increased urban densities more people will be using the existing and new open space reserves. As the population grows and more people visit the open space, there is potential that they become too busy to deliver the benefits that people value about open space. This includes being able to relax and unwind and enjoying the peace and quiet. There are also other impacts such as not being able to use some facilities because they are already in use - for example fitness stations, seats, picnic tables etc. By maximising the timeframe when there will be direct sunlight access to open space means it is comfortable and attractive to use for more hours in the day - thereby increasing its overall carrying capacity of the open space.

B5.3 Forecast demographic change

B5.3.1 From assessing the data available on the .id Forecast Community Profile for City of Melbourne, the following demographic trends are forecast in the residential community through to 2041:

- An increase in the proportion of young families with school age children.
- A decline in the young workforce and tertiary students.
- An increase in the proportion of the people in the 60 plus age range.

Photo 15 ***Local open space*** *Relaxing, socialising and playing in open space in summer, February (Source: TBLD)*

B5.3.2 While these demographic trends are relevant to the residential community, it is anticipated that there will continue to be a high proportion of tertiary students visiting and using open space during the day as part of attending tertiary education institutions in the city. Similarly, the young workforce will continue to use open space as part of the worker community even if the overall proportion of them living in the City of Melbourne has declined.

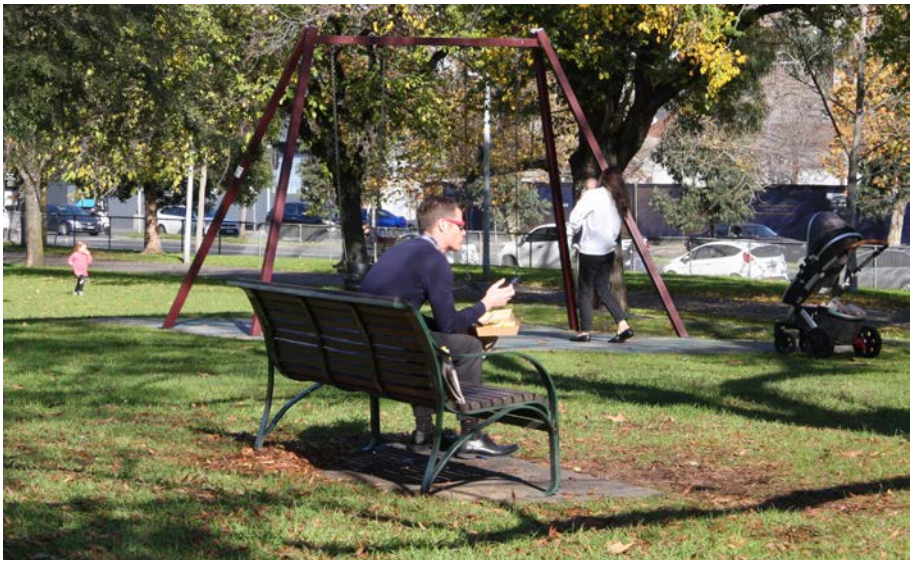


Photo 16 ***Local open space*** *Taking a break from work and playing with children in the same space in mid-winter, June (Source: TBLD)*

B5.3.3 Adequate levels of sunlight access and Vitamin D during winter are particularly important for young children and older people as described in Section B3 of this report.

B5.3.4 In summary, the forecast population growth will place increased demands on open space. Good levels of winter sunlight access to open space will be part of the process of improving the quality, useability, adaptability and resilience of a green open space system to cater to increased numbers of people relying on open space.

B6 Summary of opinion

B6.1 Winter sunlight access to open space in the City of Melbourne directly contributes to the quality and value of public open space. The City of Melbourne is recognised as one of the world's most liveable cities and this is in part due to the quality of the public open space network. More recently however, the quality of the public open space network is being compromised by built form increasingly overshadowing it in winter. While there have been some specific measures in place to protect the major areas of open space such as the Shrine of Remembrance from overshadowing, this level of protection has not been applied to all public open spaces.

B6.2 Council is planning for a substantial increase in the resident and worker population in the City of Melbourne. The resident population is forecast to continue to grow and more than double by 2041 and the employment population is also forecast to increase. This means more people will be living and working in high density development with little or no private open space and will rely on the existing and proposed new public open space to meet the majority of their open space needs. This will place increased pressure on the open space network including all types of public open space. To ensure that the community can easily access open space with good sunlight access in winter means that it is appropriate to protect sunlight access to all types of open space during winter, and not only the major areas of open space.

B6.3 A summary of the reasons for this include:

- The majority of the community will live and work in high density areas with limited or no access to private open space. They will therefore rely on public open space to meet most or all of their outdoor needs including to exercise, socialise and to relax and unwind.
- We need direct sunlight on our skin to produce sufficient levels of Vitamin D to maintain excellent bone health. In winter we need longer exposure time to sunlight to receive adequate levels of Vitamin D due to lower levels of UVB during winter compared to summer. Research indicates there are higher levels of Vitamin D deficiency in the population in winter.
- Winter is cold in Melbourne and people are therefore less likely to go outside to use open space in the winter. Open space with direct sunlight in the winter makes it more appealing, warmer and more comfortable to use which will encourage people outdoors allowing them to benefit from exposure to natural sunlight.
- Direct sunlight to public open space in winter also supports healthy vegetation cover and strengthens the flora and fauna values. The presence of natural features and greening in high density urban environments contributes to lower levels of stress and anxiety in people and they are able to relax and unwind more easily in natural spaces with greening compared to spaces with an absence of greening.

- Green public open space contributes to mitigating urban heat island effect through increased retained moisture levels that assist to effectively cool the microclimate during extended periods of extreme heat. Adequate levels of sunlight make it possible to have healthy plant growth and green spaces.
- Winter sunlight to all types of open space is required irrespective of the hierarchy classification. Access to winter sunlight is a community health and wellbeing issue that is not related to the catchment of users for a specific open space. In fact, much of the incidental use of open space to take a break outdoors occurs within a 5 to 10 minute walk of home or the workplace, and this is frequently the local open space network and not the larger areas of open space.
- Winter sunlight access for five hours a day provides a window of time in which the community can visit open space, particularly recognising that not everyone works standard daytime hours and will visit open space outside of the normal lunch time hours.
- Winter sunlight access to the whole open space is required to maintain adaptability in the future. This will assist to accommodate increased numbers of people who will need to use the space and allow for changing trends and needs in open space design including being added to over time. Winter sunlight access to the perimeter of the open space is required as this is valuable part of the reserve and is well used for seating, walking, socialising and planting.

C Response to the Amendment documentation

C1 Overview

I have been asked to familiarise myself with the Amendment documentation and state whether I am supportive of the officer recommended changes to the response to submissions as per 4 February 2020 Report to the Future Melbourne (Planning) Committee. I have provided my response to the Council officer recommendations in C2 below. I have also provided comment on the extent of parks included in exhibition version of the Amendment, as there are a number of differences between the parks shown in that report and open space shown in the *City of Melbourne Open Space Strategy 2012*.

C2 Relevant Council officer changes to the Amendment

C2.1 Removal of Haymarket Roundabout

C2.1.1 The Council officer report recommends the removal the roundabout due to its primary traffic function. I agree with its removal and note that it was not included as open space in the 2012 Strategy for that reason.

C2.2 Removal of the Royal Society of Victoria Property

C2.2.1 The Council officer report recommends the removal the Royal Society of Victoria Property due to it being in private ownership. I have referred to the 2012 Strategy Technical Report and the external surrounds of the building was included as public open space as it was noted to be public land at that time. If it is privately owned then I agree with its removal.

C2.3 Designation of Flagstaff Gardens as a modified Type 3 Park

C2.3.1 Flagstaff Gardens is a highly valued and well used open space as identified in the *City of Melbourne Open Space Strategy 2012*. In terms of sunlight access I consider that all areas of Flagstaff Gardens should receive winter sunlight access for the reasons provided in my opinion.

C3 Public parks included in the exhibition version of the Amendment

C3.1 I have reviewed the maps showing the public parks in the exhibition version of Schedule 8 to Clause 43.02 Design and Development Overlay. There are some differences between the open space shown in the *City of Melbourne Open Space Strategy 2012* and those shown in the Schedule 8 to Clause 43.02 Design and Development Overlay. Some of the differences are due to new open space having been added to the open space network since the 2012 Strategy was prepared. The differences below are described by Map Numbers in the Exhibition Version of Schedule 8 to Clause 43.01 Design and Development Overlay:

C3.2 **Map 5** (North Melbourne and part of West Melbourne)

- **Haymarket Roundabout**
  This was not identified as public open space in the 2012 Strategy and agree with the Council officer recommendation to remove this from the Maps.
- **Victoria Market Reserve**
  The reserve in the centre of the roundabout at the intersection of Franklin Street and Queen Street. It was identified as public open space in the 2012 Strategy given the roundabout is wider than 20 metres and is on local access streets only which means it is used as public open space when traffic volumes are low. This should be considered for inclusion in the Amendment mapping.
- **Victoria Market Car Park has been rezoned as PPRZ**
  The Victoria Market Car Park has been rezoned as PPRZ meaning that it is identified as a future public open space. This should be considered for inclusion in the Amendment mapping.

C3.3 **Map 6** (Parkville)

- **Royal Park**
  The extent of Royal Park does not reflect the current PPRZ zone or the extent shown the 2012 Strategy and is recommended to amended.

C3.4 **Map 7** (Carlton)

- **Exhibition Buildings**
  The Exhibition Buildings are located between Carlton Gardens North and South and the land for the buildings is not zoned PPRZ.

C3.5 **Map 8** (East Melbourne)

- **Burston Reserve**
  This open space is missing from the map and is recommended to be added consistent with the 2012 Strategy
- **Gordon Reserve**
  This open space is missing from the map is recommended to be added consistent with the 2012 Strategy

- **William Haines Court**
  This open space is missing from the map is recommended to be added consistent with the 2012 Strategy
- **Parliament Place**
  This open space is missing from the map is recommended to be added consistent with the 2012 Strategy

C3.6 **Map 9** (Melbourne 3004 and South Yarra)

- **Toorak and St Kilda Road Reserve**
  This open space is missing from the map and is recommended to be added consistent with the 2012 Strategy
- **Government House**
  This is shown as open space but should be removed as it is does not form part of the public open space reserve.
- **Melbourne Park**
  This land is zoned PPRZ and is included as restricted public open space in the 2012 Strategy. It is recommended this is added to the map.
- **Olympic Park**
  This land is zoned PPRZ and is included as restricted public open space in the 2012 Strategy. It is recommended this is added to the map.

D Response to submissions

D1 The following table includes a summary of the issue raised in the submissions that are relevant to my area of expertise in open space planning along with my response to the issue. The number refers to the submission number.

No.	Summary of issue	Response to issue
18	**Submission 18**	
18.1	Submits that with high rise apartment living, public open space will be of the utmost importance to liveability. Overshadowing them would significantly detract from the psychological, health and well-being benefits to residents.	• Public open space is particularly important for people living and working in high rise buildings, as typically they have limited access to private open space. This means they visit public open space for all their outdoor needs including socialising, relaxing, exercising and playing with children. • For the reasons explained in Section B3 of my Statement, the community need access to natural sunlight, particularly in the winter and in a high density urban context where outdoor private open space is limited. Therefore, protecting public open spaces from increased overshadowing between 10am and 3pm in the winter will assist to retain the desirability to visit open space use by the community who live and work nearby.
25	**Submission 25**	
25.1	Submits that the social and environmental benefits of high rise living outweigh the cost of the public open space being overshadowed.	• Melbourne has been recognised as one of the most liveable cities in the world. Open space is one of the factors that contributes to its character and liveability as described in Section B2 of my Statement. This makes it an attractive place to live, work and study and is the reason why many people have chosen to live and work in the city, leading to the increase in high rise development. • While it is important to accommodate more people in the City, I consider it is important to consider and plan for creating a sustainable and healthy community. Adequate levels of winter sunlight access to open space makes an important contribution to this objective, as described in Section B of this Statement. I am therefore of the opinion that it is an important consideration and influence on acceptable levels of development for the City in the future.

No.	Summary of issue	Response to issue
25.2	Submits that bad weather would have a greater impact on the use of open space during winter than it being overshadowed by buildings.	• Adequate levels of sunlight access to public open space contribute to making it attractive, warm, and inviting for the community to use in winter. While there is bad weather in winter, the key issue is that people need to be encouraged outdoors during winter so they receive adequate levels of sunlight for their health and wellbeing as described in Section B3.2 of my statement. If the open space is overshadowed by buildings it is less likely to be used during winter, when from a health and wellbeing perspective the community needs access to winter sunlight. • The health and wellbeing benefits on winter sunlight access to open space are summarised in Section B3.2 of my statement.
28	**Submission 28**	
28.1	Protect the north-west corner of Flagstaff Gardens from any overshadowing of the late afternoon sunlight. The sunlight and the longer views and vistas including the sense of space are important to people's mental health and wellbeing	• Flagstaff Gardens is an important open space for the north west part of the city. The submission highlights some of the more intangible values of open space including enjoying views and vistas and catching the evening light. The elevated nature of the north western part of Flagstaff Gardens is one of its key features. • While the proposed amendment will protect sunlight access to Flagstaff Gardens from 11am to 3pm on 21 June, it does not protect the gardens from further overshadowing before and after these times. The reasons for this is explained in the *Sunlight access to public parks modelling analysis report,* prepared for the City of Melbourne by Hodyl + Co. • While it is preferable from a public open space perspective to retain the early morning and late afternoon sunlight to the gardens, the Hodyl + Co report describes the other factors that need to be considered associated with the increased urban densities in Melbourne. • This submission highlights the importance of open space to the community for a wide range of needs and values, and the reason it is important to protect winter sunlight access to open space.

No.	Summary of issue	Response to issue
30	**Submission 30 and 32**	
30.1	Submits that Melbourne's cold climate justifies why we need stronger controls than other cities in Australia.	• Noted. Refer to my Response to Submission No. 25.2 and to Section B in my Statement.
30.2	Submits that changes to vehicle use in the future will open up opportunities for new open space.	• The *City of Melbourne Open Space Strategy 2012* identifies priority areas where new public open space is required. As part of the 2012 Strategy we undertook a detailed open space needs assessment based on the forecast growth and change. The areas and the type (hierarchy) of new open space was clearly identified in the 2012 Strategy. Some of this new open space may be delivered through conversion of existing road space to public open space, however other areas will require larger land parcels including options for land purchase. So while changes to vehicle use may open up opportunities for new open space, the existing 2012 Strategy already provides direction for where new open space is required. The 2012 Strategy includes the criteria for new open space and one of these is adequate levels of winter sunlight access. In the context of this Amendment, this will be direct sunlight between 10am and 3pm on 21 June.
75	**Submission 75**	
75.1	The submitter considers that a preferable performance based approach for permissible levels of overshadowing based on the Councils Open Space Hierarchy in the City of Melbourne Open Space Strategy, the Metropolitan Open Space Strategy and the types and intensity of uses of the open spaces and on surrounding land uses is preferred.	• In Section B4.I have described the City of Melbourne Open Space Hierarchy, which I developed with Council when I prepared the *City of Melbourne Open Space Strategy in 2012*. It is was developed prior to the release of the Metropolitan Open Space Network Provision and Distribution Report in 2017. • As described in Section B4.1 of my Statement, a key reason for the adequate levels of winter sunlight access being required to all public open space irrespective of hierarchy is so that everyone who lives and works in the City, including the most vulnerable with limited mobility can easily reach open space with adequate sunlight access during winter. • As described in Section B3.1 of my Statement, in addition to the visitation and use, there is also a need for well-distributed green open space with healthy and robust vegetation to assist with mitigating urban heat island effect. Winter sunlight access improves the chances of green spaces being viable to maintain in the future. In addition to mitigating urban heat island effect, green open space delivers the benefits of access to nature and greening to residents and workers.

No.	Summary of issue	Response to issue
		• In relation to preferring a performance-based approach based on the intensity of adjoining land use and the open space. I do not agree with this approach as protecting winter sunlight access to all public open space will maximise its future adaptability in the long term in the context of change.
87	**Submission 87**	
87.1	Submits that the Haymarket roundabout does not meet the definition of a 'park'.	• Agree with the submitter and note that this is not identified as a public open space in the *City of Melbourne Open Space Strategy 2012.*
87.2	Submits that using the winter solstice as a measure for retaining sunlight access to the park between 10am and 3pm is inappropriate as June is the cloudiest month of the year and therefore is unlikely to yield significant social benefit.	• Medical research states that Vitamin D plays an essential role in bone health and sunshine is the main source of Vitamin D. Refer to Section B3.2 of my Statement for a more detailed description of the research that has informed my Statement. • During winter we need to spend more time in the sun to receive adequate levels of Vitamin D compared with the summer. Research has found there are higher levels of Vitamin D deficiency in the population during winter. Providing public open space that will be comfortable and attractive for people to use and safe and easy to reach when the sun is out in winter will assist to address this issue. • For this, and other reasons described in my Statement, Winter is the most important time for ensuring there are adequate levels of sunlight in public open space. • In relation to cloud cover – there are many days during winter when there are sunny breaks in combination with cloud cover. Looking at the information on the Bureau of Meteorology Website regarding what is recorded as a cloudy day, the definition confirms that cloudy days includes days with some breaks in the cloud cover and patches of blue sky. • The sunny breaks are the prime time for people to be outdoors. The aim of these controls is to ensure that there is sunlight access to open space when the sun comes out during the winter months. This is the most critical time of the year for the community to have access to sunlight for their health and wellbeing.

No.	Summary of issue	Response to issue
101	**Submission 101**	
101.1	Submits that winter sunlight access should be discretionary to allow consideration of existing features and designs within the open space. This includes not applying to areas that are heavily treed or with tan bark.	• There is a need to maximise winter sunlight access to the entire open space. This is to allow for future adaptability and change over time to the role, character and design of the open space. This is particularly important in the context of forecast change and growth which will mean more people will need to use open space, and its configuration and design may need to be changed to meet this in the future.
101.2	Submits that the winter shadow controls are more appropriately used for higher order parks of Municipal significance and not for open space at a local scale.	• Refer to my response to Submission 75.1.
101.3	Submits it is more reasonable to reduce the testing hours to the lunch time period of 11am to 2pm when the winter sun is strongest.	• Open space is used by people at all times of the day, and not only at lunch time which is explained in Section B3 of my Statement. This includes catering to different demographics who use open space at different times of the day. It also increases adaptability and capacity of the open space to accommodate more people by maximising the time period in which the open space is inviting and comfortable to use.
101.4	Submits that people use open space when there is little or no sunlight including after the sun has set.	• The purpose of these controls is to encourage people outdoors to use open space during the day in winter so they have adequate exposure to sunlight to maintain their health and wellbeing. This is not intended to replace or be instead of visiting open space at other times of the day which is also noted and supported.
101.5	Submits that it is acceptable to allow the edges of parks to be overshadowed during winter, especially larger spaces.	• Maximising the adaptability of open space is a key principle that guides the future provision, design and management of public open space. As urban densities increase the open space network will need to adapt to meet the changing needs. Part of this is likely to be the expansion in size of existing open spaces, as per the recent expansion of Lincoln Square. When the open spaces are reconfigured or expanded in the future, what may be the edge of an open space now may be more central to the space in the future. • As can be seen in many of the small open spaces in the City, the perimeter of the open space is well utilised for activities such as seating, socialising

No.	Summary of issue	Response to issue
		and planting. Many of the open spaces have existing mature trees to the perimeter of them that contribute to the character and urban forest canopy cover. I consider that the perimeter of the open space is well used and is of equal value to the remainder of the open space and it is not appropriate to have reduced sunlight protection for these areas of the open space.
103 & 64	**Submission 103 and 64**	
103.1	Submits that Weedon Reserve is surrounded by Category 1 Road Zones and therefore has poor amenity as a useable park. Therefore they do not consider that the controls are proportionate to the role and function of Weedon Reserve.	• Weedon Reserve is an established open space with existing mature trees, paths, seats and a monument. While it is acknowledged that Wellington Parade and Punt Road have significant traffic volumes, Weedon Reserve is large enough to provide a sense of space for people using it. The presence of the large mature trees and grassed areas contributes to the urban greening and landscape character of this area. The reserve is elevated with views to the west of the city skyline which contributes to the sense of space and appeal of the reserve. • The 2012 Strategy recommends on page 16 *'Investigate the potential to improve accessibility and use of Weedon Reserve for people north of Wellington Parade'*. The 2012 Strategy Technical Report identified the upgrade would be for both the existing and forecast resident and worker population in the catchment to the north of the reserve. The Action in the 2012 Strategy Technical Report provides more detail - *'Prepare a design plan to guide future upgrade of Weedon Reserve including investigating the potential to improve accessibility and use of Weedon Reserve for people north of Wellington Parade'.* • I am therefore of the opinion that Weedon Reserve meets the criteria for public open space and should receive the appropriate sunlight protection measures which are proposed in Amendment C278.

Statement

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

Joanna Thompson, AILA
Director, Thompson Berrill Landscape Design Pty Ltd