

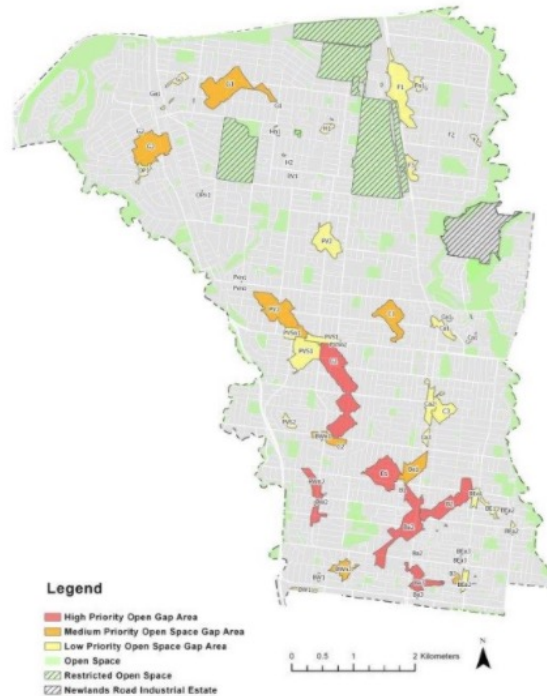
# Inquiry into Environmental Infrastructure for Growing Populations: Submission

Prof. Jane Burry (School of Design), Prof. Marcus White (School of Design), Dr Ian Woodcock (School of Design), Prof. Mark Burry (Smart Cities Research Institute) , Swinburne University of Technology



Prahran Square by Lyons Architecture and Aspect Studios.

Image: John Gollings



# the benefits of accessing and using different types of environmental infrastructure

- There are many studies that demonstrate the benefits of both **viewing greenery** and being able to **visit** and be in green areas and **breathe clean air**;
  - Greenery and in particular, **shade in cities** is linked to **increased walking and cycling** as active transport and recreation, which is itself linked to **proven health benefits**;
  - **Direct health benefits** – hospital recoveries, wellbeing in nursing homes;
  - **Reduced thermal stress** through being able to take green and naturally shaded routes through urban areas;
  - **Shading from a tree canopy** can provide a sun protection factor (SPF) of 2, with denser canopies providing between 5 and 15. This is particularly important in Australia which has one of the highest incidences of skin cancer in the world.
  - **Green infrastructure** can also play an important role in **water sensitive urban design and flood mitigation**
- 
- Chinmoy Sarkar, Chris Webster, Matthew Pryor, Dorothy Tang, Scott Melbourne, Xiaohu Zhang, Liu Jianzheng, Exploring associations between urban green, street design and walking: Results from the Greater London boroughs, Landscape and Urban Planning, Volume 143, 2015, Pages 112-125, ISSN 0169-2046. (Example of many studies – this one is particularly extensive.)
  - Yi Lu, Yiyang Yang, Guibo Sun, Zhonghua Gou, Associations between overhead-view and eye-level urban greenness and cycling behaviors, Cities, Volume 88, 2019, Pages 10-18, ISSN 0264-2751
  - Park, S.-H., & Mattson, R. H. (2009). Therapeutic influences of plants in hospital rooms on surgical recovery. HortScience, 44(1), 102–105.
  - Ulrich, R. S. (1984). View through a window may influence recovery from surgery. Science, 224(4647), 420–421.
  - Grant, R. H., Heisler, G. M., & Gao, W. (2002). Estimation of Pedestrian Level UV Exposure under Trees. Photochemistry and Photobiology, 75(4), 369–376
  - Fransen, M., Karahalios, A., Sharma, N., English, D. R., Giles, G. G., & Sinclair, R. D. (2012). Non-melanoma skin cancer in Australia. Med J Aust, 197(10), 565–8.



# the impact of population growth in Melbourne and regional centres on the provision and preservation of environmental infrastructure

- There is **more highrise and high and medium density housing** in response to growing population, increased density and reduced in dwelling space, limited or no external dwelling space;
- This leads to **greater reliance on shared community environmental infrastructure** outside the home for **very diverse uses**;
- These uses need to span:
  - Sitting
  - Shade
  - Sun
  - Quiet
  - Picnic/BBQs
  - play for children of diverse ages,
  - play for adults
  - sport (multi sports: football, tennis, basketball, netball, bicycle polo etc.)
  - fitness – running, outdoor classes, exercise equipment, cycling
  - botanicals/horticulture

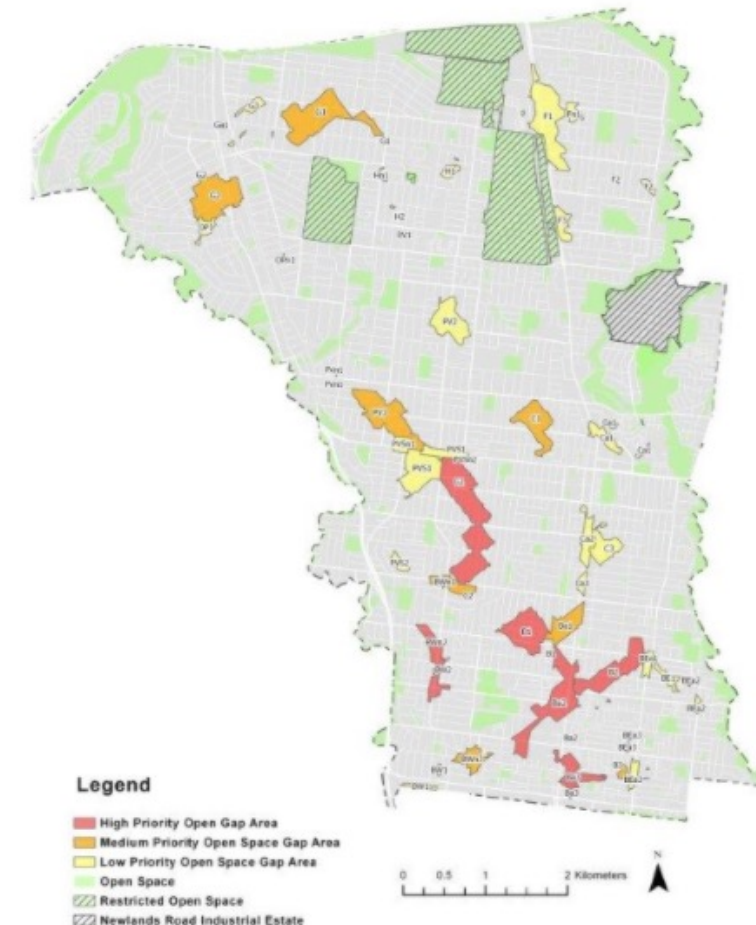


Prahran Square by Lyons Architecture and Aspect Studios.

Image: John Gollings

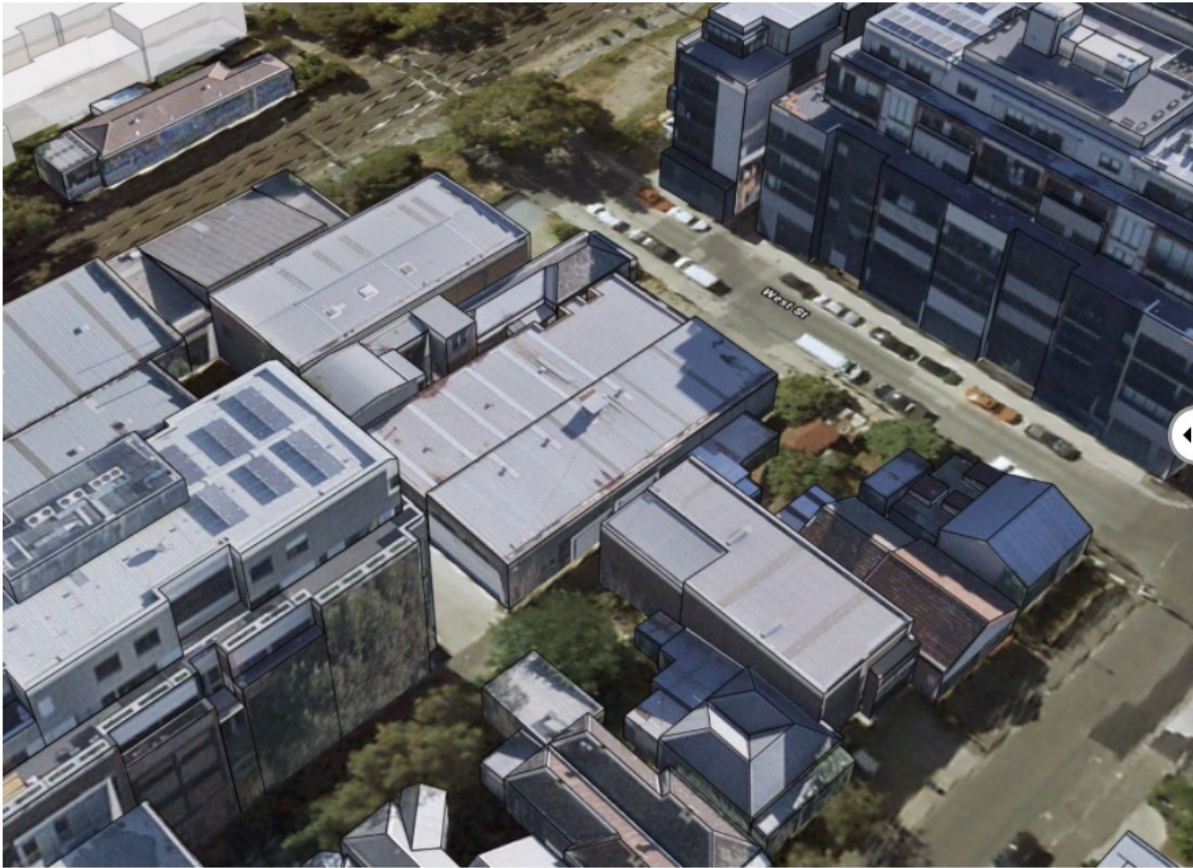
# differences in the availability of environmental infrastructure between different suburbs and between different regional centres

- a) **Access** to, b) **prevalence** of, c) **quality** of environmental infrastructure varies greatly between suburbs and centres;
- In metropolitan areas, the **newer fringe is better served than many middle and inner suburbs**;
- Critical is the ability to **access environmental infrastructure on green walking and cycling routes**, many of which are on much of the street network;
- For instance, 300,000-400,000 Melbournians do not live within walkable access of adequate open space;
- **10 to 20-minute ped-sheds** (walking access to parks and community facilities) are critical to planning environmental infrastructure that will provide maximum benefit;
- It is **more challenging to retrofit inner and middle suburban walking and cycling** routes as this often requires re-allocation of street space, plantings amongst services and infrastructure, undergrounding of public parking and the acquisition of land; However, some municipalities such as Stonnington (eg. **Cato St Carpark revitalised as Prahran Sq**) and **Moreland (acquisition of sites for new public open spaces)** are showing how this can be achieved.
- **Formerly industrial suburbs, such as Footscray and Brunswick**, have narrow streets (20 and 12m). **Partial (or in places, full) pedestrianisation**, with restricted local access to cars, increased tree planting, pocket parks and pop-up park-lets could dramatically facilitate an increase in green routes without significant capital investment





# Moreland Park close to home: BEFORE & AFTER





# Moreland Park close to home: BEFORE & AFTER



# the effectiveness of current legislation and planning provisions in securing environmental infrastructure

- In some cases the focus on long-term, permanent land and infrastructure-based solutions can mean **drawn-out planning processes and high levels of capital investment** leading to extended timeframes that inhibit innovation and implementation. Around the world, **tactical and temporary ('pop-up') approaches have demonstrated that significant beneficial changes** in the provision of public open space within existing urban areas can be implemented rapidly, and in ways that are adaptive to community needs.





# the impact of COVID-19 on the importance, use and design of environmental infrastructure

- Social Distancing presents a key opportunity as well as critical imperative to **take over some of the streets for primarily pedestrian/cycling use**, wider footpaths and cycle lanes, lower velocity car use and greening;
- Coming out of lockdown, many former public transport users use cars potentially increasing the traffic on the roads;
- It is a critical time to **reinforce the contribution of active transport** linking people, homes and workplaces to environmental infrastructure;
- In response to the precedent set by COVID-19, more people will also continue to **work from home** more of the time, ongoing;
- This will increase the focus on environmental infrastructure access and use **close to home**;
- This **increases the need for diversity** to be the leading principle in the planning and design of environmental infrastructure



# examples of best practice and innovative approaches to securing environmental infrastructure in other jurisdictions

- The Clean Air and Urban Landscapes Hub <https://nespurban.edu.au>
- The Barcelona Super Blocks <https://www.vox.com/energy-and-environment/2019/4/11/18273896/barcelona-spain-politics-superblocks>
- Pontevedra pedestrianisation <https://www.theguardian.com/cities/2018/sep/18/paradise-life-spanish-city-banned-cars-pontevedra>
- Houten introduction of direct cycle routes and lengthened car journeys: <https://www.theguardian.com/cities/2018/sep/18/paradise-life-spanish-city-banned-cars-pontevedra>