



Plan for green urban precincts in the recovering city

Policy Brief

This briefing has been written by researchers affiliated with RMIT's Urban Futures Enabling Capability Platform as part of RMIT's Greener Start Initiative to inform policy makers and the wider community on opportunities to develop integrated urban precincts for a greener Melbourne.

Overview

The need for green urban precincts stems from the mounting pressures driven by environmental change on cities. While Australian cities continue to grow, it is critical to consider the effects of urban extension on greenfield sites and to reduce the negative outcomes that come with an overconsumption of natural resources. This is particularly the case for Melbourne, which prior to COVID-19 was predicted to overtake Sydney as the most populous city in Australia. As much of Melbourne's growth is occurring in outer suburban areas, it is more critical than ever to identify ways to reduce and prevent the negative impacts of the highly car-dependent and low-density suburbs.

Within urban sustainability concerns, planning to mitigate the effects of climate change for the built environment and societies has emphasised the relevance of local interventions. The benefits of adopting a precinct scale approach are apparent in the State government's '20-minute neighbourhood' policy. Many aspects of the 20-minute neighbourhood policy, such as the provision of safe spaces in which active transport is

achievable for all, are encapsulated in the local and efficient objectives of the green urban precinct. As a framework for urban development, the defining feature of the green urban precinct is the additional benefits that accrue from systematic and multi-faceted approaches to urban challenges, to create more resilient urban infrastructure and mitigate environmental change. Other underlying design principles of green precincts are community consultation, human-scale urban forms, active transport and public transport access, and greenery.

This policy brief provides insights into how Melbourne can implement and benefit from developing green urban precincts, drawing on the analysis of five international precinct-scale developments:

- ▶ **Augustenborg**, a renewal of a 1950s social housing precinct in Malmö, Sweden.
- ▶ **Paris Rive Gauche**, a master planned redevelopment with a focus on urban innovations and social housing in the Masséna sector.
- ▶ **Peña Station NEXT**, a joint proposal by the City of Denver and local property developers, with technical expertise and digital experience provided by Panasonic, a project partner.
- ▶ **Vauban**, the formative example of sustainable, bottom-up green urban precinct development in the German city of Freiburg.
- ▶ **Vulkan**, a mixed-use precinct in the centre of Oslo, which has benefited from an underlying commitment to sharing resources.

These precincts provided examples of outcomes that could result from re-orienting Melbourne and its development by creating

green, inclusive and amenable suburbs facilitated by co-ordinated interventions. The analysis resulted in practical and policy solutions, planning/urban models and governance arrangements that have integrated multiple urban systems (e.g., land use, energy, water, urban greening, housing, waste, etc.) and facilitated change in other cities across the world.

Green urban precinct developments in Melbourne need to address existing conditions within the city and/or in suburbs such as poor public transport, a lack of fundamental social infrastructure and distance from activity centres. There, prevailing conditions need to substantially change before green urban precincts can be developed¹. The required shifts in infrastructure provision, urban structures, and the development industry indicates that the wide adoption of green urban precincts as a development paradigm in Melbourne requires a process of transformation. “Melbourne’s policy makers and its development industry must be encouraged to embark on program of urban experimentation and innovation, as the resulting outcomes of innovative design and development that respond to these conclusions may result in different solutions when shaped by the Melbourne’s urban forms.

Key recommendations

The benefits of integrated precincts

The case study analysis indicates that there are benefits of urban development and redevelopment that are only achievable through precinct-scale design and development. The advantages of an integrated precinct approach were evident in the shared and co-dependent infrastructure systems in Vulkan, the drainage solution in Augustenborg and the state-of-the-art systems being installed at Peña Station NEXT. Overall, the case-studies show three main benefits to adopting an integrated approach while developing green urban precincts:

- A systemic approach to infrastructure delivers more efficient and widespread outcomes. In particular, precinct-scale design for energy efficiencies provides better results than a suburb with energy-performant buildings in it.
- Planners and policy makers need to consider the ‘greenness’ of how people live around their dwelling, rather than the housing infrastructure they inhabit, and what other health, well-being and environmental benefits it may afford.
- Integrating multiple urban systems in the planning of green precincts is the most time-efficient approach at a time when cities are facing critical environmental pressures.

Place-based design and close attention to the wider urban context

in which the precinct is situated was a key commonality between the case-study precincts. All five precincts were planned with a focus on a human-scale delivery of infrastructure and spaces. Built form and population density was forefront in each green urban precinct design, and significant mixed land use created opportunities for a diversity of practices and interaction, fostering vibrant and safe (through passive surveillance) streetscapes. Modal hierarchy prioritising public and active transport, with related spatial allocations, was also present in all five case studies. Street trees and open spaces were particularly prioritised around high-density housing, as demonstrated in Augustenborg. Importantly, the adoption of core site principles was initiated from the start, and green objectives ‘baked-in’ from the outset rather than added later in most case-study precincts. The experience of Paris Rive Gauche in responding to changing requirements over the duration of the project indicated a need to be progressive in approaches to standards in long-term projects, as well as to be flexible enough to cater for policy and social changes.

The case-studies emphasised the positive results of empowering local residents, in guiding projects forward, the key role of participatory planning and in establishing and coproducing the project. This was reinforced by the opposite effect, where the capacity of local groups and activists, equipped with professional-like legal and planning expertise, were able to oppose aspects of developments that were not seen as socially beneficial. The initial plans to redevelop the Frigos refrigerated warehouse in Paris Rive Gauche was an example of this. In Augustenborg, this engagement was performed in a genuinely inclusive way with CALD (culturally and linguistically diverse) residents involved in the design process. Initial urban design decisions can be strongly informed by residents, and more likely to be socially accepted and understood.

Two related factors in the success of green urban precincts were the quality of public transport provision and the access to employment, which were key features that enabled car free environments. The success of Vauban was in part a result of the high-quality public transport provision, with tram services running through the centre that provides access to Freiburg’s employment hubs. The Paris Rive Gauche project was initiated with the opening of the first self-driving subway line in the capital, which efficiently linked this eastern and southern precinct to the northern and western neighbourhoods of Paris in 6 stops and 9 minutes, with a 5-minute frequency. Paris Rive Gauche was intended to become an affordable residential area – although median real-estate prices in this neighbourhood remains much higher than the rest of the metropolitan region² – as well as a new major employment and activity hub. Vulkan is on a bus route and is less than 25 minutes’ walk from central Oslo. In addition to the substantial employment provided by Panasonic’s offices, Peña Station NEXT is an example of a precinct development that has public

transport provision at its core, with the train station allowing ready access to employment and services at the airport and in Denver's central business district. Access to the train services is to be provided through either active transport or the autonomous shuttle bus service.

Outer suburban development in Melbourne has typically been highly car-dependent and have limited employment opportunities, which has created demands for infrastructure investment³. There is a move towards decentralising employment in Melbourne, with the development of suburban employment hubs part of the justification for the Suburban Rail Loop project⁴. For Melbourne, successful green urban precincts require locations well serviced by public transport and ready access to employment, and therefore if they are to be implemented across the city, investment in services and the redistribution of services is required.

Green energy has been in the main focus of case-studies, for electricity and heating supply. Solar panels play the main role in electricity generation, with support from biomass in Augustenborg, heat reuse and geothermal systems in Vulkan and biomass experimentation in Paris Rive Gauche. The new Pena Station NEXT proposes a microgrid by combining extensive solar panel installations with batteries. This is a high technology solution for increasing self-sufficiency inside a neighbourhood. The precinct-scale infrastructure systems enabled Vauban and Pena Station NEXT to consolidate solar panels within the precinct to reduce technical issues. The precinct examples also provide evidence of the benefits of wider systems approaches to energy supply: Vauban, Vulkan and Augustenborg have responded to the opportunities presented by the conditions and uses within their precincts to develop connected systems of energy supply. The case-studies also provided examples of e-mobility charging and sharing infrastructure, which is important as electric vehicle uptake is expected to increase which need an infrastructure for getting charges and to be discharged.

- **Create a systemic approach to infrastructure in order to deliver more efficient and widespread outcomes.**
- **Consider opportunities for multiple use of by-products and mixed social activities in well-serviced precincts.**
- **Explicitly promote climate-adapted, biodiverse neighbourhoods to foster high-amenity neighbourhoods.**
- **Guide innovative solutions in green urban precincts with a set of relevant policies and regulations such as tariff policy in battery-dominant region and regulations for technological information gathering through internet of things**

- **Plan for an early delivery of social infrastructure, with a focus on inclusive cultural, social and educational spaces**
- **Involve local residents in the design of the precinct and keep them informed at every stages.**
- **Inclusionary zoning, the supply of new social housing units and of diverse housing typologies should be prioritised to retain long-term residents in the precinct.**
- **Make provision of public transport and access to employment a central consideration for precinct development.**

Opportunities and obstacles for Melbourne

The pandemic and lockdowns are being framed as an impetus for change in the way cities operate. People have experienced working from home, and while it is unlikely to replace commuting to the office entirely, an increase in teleworking is expected alongside a devaluation of central business district property⁵. As the examples of Paris Rive Gauche and Vulkan show in particular, changes to the structure and the geography of economic activity opens up space for the creation of new wealth as existing use values decline. COVID-19 has been a source of financial as well as other forms of hardship, but it is possible to seize this moment to create opportunities for change⁶.

For the many outer areas of Melbourne that do not have access to high frequency public transport services or proximity to employment hubs that are features of the case studies, significant interventions would be required as pre-conditions for the implementation of green urban precincts. Additionally, the prospect of mixed-use developments with high rates of people working and living in the same precinct are unlikely, given the specialisation, the processes of corporate unbundling and outsourcing geographically dispersing economic activity within production processes, and the added complexity of two-worker households. In this regard, the distinction between inner-city Melbourne and the middle and outer suburbs is more important for the prospect of green urban precinct development than distinctions between green-, grey- and brownfield sites, albeit with the higher costs associated with retro-fitting infrastructure.

Therefore, in addition to the precinct-scale design advantages discussed above, additional precinct considerations need to be included such as access to employment and health, education and retail services. Such a shift in focus from sustainable buildings to development that allows people to live sustainably has direct implications for government and industry. For government, residential rezoning processes and authorisations, the provision of infrastructure and efficiency ratings systems would need to be revisited. For the real-estate development industry, as well as for consumers, it is

critical to reconsider Australia's ongoing attachment to detached houses and land packages. A more market-orientated approach to this issue would be to mandate more information for housing purchases, including typical transport costs and other expenses and impacts associated with housing.

The policies recommended in Climate Change Mitigation & Adaptation in Suburban Melbourne provide detail on land use, transport, water, energy and waste, that need to be taken into account in facilitating the development of green urban precincts in Melbourne's middle and outer suburbs. This includes access to public and active transport, increased urban densities and better access to employment and service hubs⁷.

- **Strategic investments in amenity and infrastructure can guide the development of a greener, more inclusive post-COVID city.**
- **Supplement housing standards with assessments of the efficiencies of living in place, as well as better information for potential purchasers on cost and sustainability impacts of housing choices.**
- **Green urban precincts, and greener suburbs in general, require greater emphasis on interconnected and efficient land use, transport and infrastructure planning.**

Experiments and Interventions

There are actions that can be undertaken in the short-term that can provide impetus for the development of green urban precincts. These recommendations also reflect the urban development framework discussed above, providing insights into aspects of the development industry and housing supply in Melbourne.

The Grattan Institute undertook stated preference experiments in 2011 to develop an understanding of the willingness to pay for different types of housing, and the trade-offs between form and location⁸. Similar experiments would provide insights into the demand for housing in green urban precincts and provide confidence to developers in undertaking innovative and sustainable developments in Melbourne. Developing an understanding of the market for such housing options may also inform the development and intensification of land use around the proposed station locations for the Suburban Rail Loop. Similar experiments may also be used to determine if there is a market for office and other commercial developments as part of mixed-use green urban precincts. Objective, public-funded research is likely to have greater benefit than private-sector led research in this instance.

The recent announcement of State Government investment in social housing⁹ provides an opportunity for precinct-scale design

experimentation, drawing on the examples of Augustenborg and Paris Rive Gauche in particular. Given the designs are likely to respond to a budget allocation rather than a profit motive, there is an opportunity to promote innovative responses that are assessed on green outcomes achieved, rather than meeting mandated standards. In addition to improving the lives of residents and reducing the costs of occupancy, there is an opportunity to showcase new ways of addressing urban problems and as such instil greater confidence in the development industry. The 20-minute neighbourhood pilot projects underway in Melbourne suburbs, as well as future greenfield experiments, already indicate a willingness to progress and change urban development.

Additionally, a related opportunity is to draw on the example of Baugruppen in Vauban. Baugruppen, an economic model for housing which involves sharing the costs of developing among future residents, was instrumental in the design of the precinct. While undoubtedly a success in the Vauban example, in other instances the results have been less remarkable, a reflection of the distinct community residing in Vauban at the time of the project. The opportunity is therefore to develop communities of shared interest, using social media for example, that can form Baugruppen-like urban development collectives. As an experiment in urban development, social housing initiatives may provide a suitable vehicle.

Governments can mitigate risk through guaranteed income streams, but it is the outcome that is important, not the method of long-term rentals by public organisations as occurred in Vulkan. If housing was reframed as infrastructure, similar to transport projects with dimensions of private and public good and an understanding of the benefits of facilitating interventions that contribute to a better city, then there is an argument for extending similar financial arrangements to the housing sector. While public-private partnerships are not without their critics, they are a standard method of project delivery in Victoria.

- Consider the interaction of markets and policies and the prospects for transforming Melbourne's housing and development industries, as implementation rather than design is the main barrier to green urban precincts and other urban innovations.
- Undertake stated preference experiments to test property markets and instil confidence in developer innovations.
- Make use of major government interventions in housing and the transport to leverage urban experiments.
- Governments should consider ways to mitigate developer risks to support green urban precincts, reflecting the public benefit of better housing provision.