Suburban potential
the challenges and opportunities of greyfield regeneration in Melbourne
Katherine Sundermann
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“If you really want to change the city, or want a real struggle, a real fight, then it would require re-engaging with things like public planning for example, or re-engaging with government, or re-engaging with a large-scale institutionalised developers. I think that’s where the real struggles lie, that we re-engage with these structures and these institutions, this horribly complex ‘dark matter.’ That’s where it becomes really interesting.”

Wouter Vanstiphout in *Future Practice* (2012)
This thesis adapts the current planning framework in Melbourne to *unlock the potential* of the existing suburbs for high quality, diverse mid-rise development that responds to the needs of the community.
“The enterprise of urban design – that is to say, the linking together of various design visions via the negotiation of a diversity of private and public interests – consists more of the conscious positing of rules than the drawing up of plans.”

Alex Lehnerer, Grand Urban Rules (2009)
Borneo Sporenburg, a new housing area in the docklands of Amsterdam.

Development based on a flexible plan involving simple design rules by Dutch office West 8

(Source: Samuel Ludwig)
New apartments (High Street, Preston)
This thesis takes place within the context of the European Master in Urbanism (EMU), a post-professional master degree for architects that brings together spatial planning and urban design. The EMU final thesis is a small project with big aspirations: both a research project and a design vision dealing with cities and regions to be completed in only five months.

In the year and a half preceding the thesis semester I studied both at both TU Delft in the Netherlands and IUAV in Venice, Italy, absorbing the methods, research interests and world views in relation to urbanism from both universities. I learnt about the Dutch approach to urbanism: one where practitioners move between different fields and scales with ease from architecture and urban design to regional planning, and where they use their skills in clear communication and negotiation to actively confront design with politics. At IUAV in Venice I absorbed a complementary skill set in documenting cities through interviews, photography, video, mapping and observation in order to better understand, analyse and act in the city.

It is through these new lenses, and from a distance, that I was able to look again at my hometown of Melbourne and the issues it faces. It was freeing to be able to present Melbourne to a new audience, and the feedback I received gave me a new perspective on ongoing problems. On the other hand, this distance involved and the short time frame of the thesis limited the depth of its dialogue with the current academic and political discourse in Melbourne. I see this thesis as adding to the ongoing discussion about the future of Melbourne and I welcome feedback and suggestions.
Firstly I would like to thank my mentors: Vincent Nadin, Daan Zandbelt and Paola Viganò for the many enriching conversations that have helped shape my thesis. Thank you to the external examiner Vincent Gruis from TU Delft, and to the readers Bruno de Meulder from KU Leuven and Tonet Font from UPC Barcelona.

I would like to thank the many people I interviewed in Melbourne when I visited in March, 2014: Shane Murray and Diego Ramirez-Lovering from Monash University, Rob Adams and Fiona Whitworth from the City of Melbourne, Brian Ashton from Harvest Digital Planning, James Murray and Tim Hill from Tandem Design Studio, Giuseppe Demaio from Assemble Projects and Hanna Tai, artist and Thornbury resident. These conversations really helped crystalise the concept of my thesis and help both ground it in the realities of Melbourne and open it up to other future possibilities. Thank you to also to Lee-Anne Khor from Monash University and Simon Micmacher from DPCD for providing me with extensive GIS data, to Adele Winteridge from Foolscap Studio for a studio space to work from, to Georgia Nowak for her assistance with photography and to Kirsten Bevin for her help with references.

I would like to thank the EMU community both in Delft and in Venice, especially Luiz Carvalho and Anastasia Chranioti for their valuable feedback and support. Also to Jacob Tai for his help in the early stages. And finally to my parents Fred and Fiona Sundermann for their ongoing support and encouragement.
Housing in established inner suburb (Collingwood)
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New housing in outer suburb (Lalor)
Brownfield development:
the transformation of former industrial land to housing and other urban uses

Greyfield development:
the regeneration of ageing, occupied suburban areas

Greenfield development:
the transformation of rural land into suburban housing

Urban intensification:
existing suburban and urban areas are intensified, both in terms of built form and activity
1.1 Motivation

Melbourne is in a period of transition. While the horizontal mode of development that has characterised the city throughout the twentieth century still continues, there is a shift towards more vertical forms of development. The once seemingly universal dream of owning a house with a garden in the suburbs has become difficult for most given the rise and rise of housing prices. Housing preferences are also diversifying, with smaller households and an aging population desiring a range of housing types with more value placed on proximity to jobs, public transport, cafes and cultural activities than simply having a backyard. Melbourne is growing, placing more pressure on housing supply and affordability.

A new metropolitan strategy was released in 2013, which attempts to deal with these issues by concentrating most new development either in high-rise urban renewal sites close to the centre of Melbourne or in suburban developments on the periphery. It makes ‘protecting the suburbs’ one of its core aims, reflecting a not in my backyard attitude shared by many homeowners. A complete reworking of the residential zoning system reinforced this strategy. Under the new system, much of the existing suburbs are protected from intensification, making it “the single greatest change to the strategic and statutory planning system in Victoria for a generation” (Lucas, 2014).

This thesis begins with the aim to question whether ‘locking up the suburbs’ is the best way to deal with the problems that we currently face in Melbourne. Could we consider instead the potential of the low-density, well serviced and well connected existing suburbs for mid-rise development? Could sensible intensification bring benefits for the existing suburbs instead of being something to be feared?

Given that the population of Melbourne is projected double in the next 45 years (Australian Bureau of Statistics, 2012) the built form of Melbourne is set to change dramatically. This makes the question of how, where, and what kind of intensification takes place increasingly important. This thesis seeks to investigate how high quality, mid-rise development can be encouraged that unlocks the potential of the existing suburbs in order to respond better to the needs of the community.
Most homes fail affordability test for households on median income

Most Melbourne homes are too expensive for households on a median annual income, and only a handful of suburbs—mostly on the city's fringe—pass the affordability test, a government report reveals.

The report shows households earning the city's median annual income of $70,300 have few suburbs to choose from. Even the cheapest suburbs require an annual household income of between $67,000 and $90,000 to pay the mortgage and other bills.

In many inner Melbourne suburbs—which have better access to public transport and services—a household requires an income of between $120,000-$200,000 a year.

The state government report, *Melbourne, let's talk about the future*, predicts Melbourne will need an extra million homes in the next 30 to 40 years as the population increases to more than 6 million. The need for more homes will be compounded by an ageing population as the number of people over 65 is expected to double in the next 20 years and the percentage of households that have children declines.

Many of these new homes could be built around the CBD, with plans for almost 250,000 more homes stretching from Carlton to Fishermans Bend.

The report is a discussion paper encouraging public feedback on how Melbourne should be planned and developed over the coming decades. The Baillieu government is expected to release its long-term blueprint for Melbourne next year in place of the *Melbourne 2030* planning statement.

The full discussion paper will be released today.

The section made available to *The Age* raises tough questions, including how Victoria will pay for the next-generation transport network.

''There is a clear desire to identify a comprehensive vision for the transport system, in a similar way to how the road plans in the 1960s identified a long-term vision. However, we can't keep funding the way we have been and we need to explore new approaches,'' the report notes.

It says new funding options could include a broad-based metropolitan improvement levy, user-pays tolls and asset sales.

The report includes community attitudes to the different funding models, with strongest support for government bonds and private sector partnerships and least support for new tolls and raising taxes.

Planning Minister Matthew Guy said the government wanted a community discussion on what was the best funding measure for new facilities.

The report also identifies the need to increase job options in Melbourne's growth areas so fewer people are compelled to drive long distances to work.

''The key issue is that a large proportion of people use their car to access employment. Even short trips under one kilometre in the outer suburbs are made by car,'' it says. ''Around 90 per cent of people in the outer areas and 40 per cent of people in the inner areas drive to work.''

*October 26, 2012 Comments*

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*Jason Dowling*

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**Figure 9 - Population and Demographic Change, Victoria, 2011 and 2051**

Source: *Victoria in Future, 2012*

- **2011**: 5.6 million
  - 3,600,000 (64%)
  - 2,020,000 (36%)

- **2051**: 8.7 million
  - 7,820,000 (54%)
  - 5,130,000 (39%)
  - 1,950,000 (22%)
  - 1,447,000 (24%)

**Melbourne**

<table>
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<th></th>
<th>Detached</th>
<th>Semi-detached</th>
<th>Up to 3 storeys</th>
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<td>68%</td>
<td>14%</td>
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**Income Required to Purchase the Median House (Couple with 2 Children)**

- Annual income required:
  - $<150,000 to 200,000
  - $150,000 to 180,000
  - $120,000 to 150,000
  - $90,000 to 120,000
  - $67,000 to 90,000

Source: DPCD, 2012

(Median household income was $67,700 in 2012)
1.2 Problem field

Melbourne is a monocentric city, with a densely built historical, commercial and cultural core. The city has spread outwards from this central point in the form of suburban, low-density development. Its inner and middle suburbs are served by an extensive tram network, but the city becomes increasingly car dependent towards the periphery. Its popularity is reflected in its growing population, with the city projected to increase from 4.1 million to between 7.6 million and 9.8 million people by the year 2061 (Australian Bureau of Statistics, 2012).

However the provision of housing in Melbourne has failed to keep pace with population growth, demographic and lifestyle changes, and sustainability objectives. An aging population and other demographic changes has lead to a decrease in the size of the average household, dropping to an average of 2.6 people in 2011 (Australian Bureau of Statistics, 2011). By contrast the average number of bedrooms per house is increasing, reaching 3.06 in 2006 (Australian Bureau of Statistics, 2006). In a study by the Grattan Institute (Kelly et al., 2011) showed that despite assumptions of the universal appeal of the detached house, those interviewed chose a variety of housing types and locations. The report also showed that both the existing and new supply of housing types did not match these choices, with an oversupply of detached houses and an undersupply of semi-detached houses and apartments. Melbourne also suffers from housing unaffordability, with households on a median income only able to purchase a house on the periphery of the city (Dowling, 2012).

Successive metropolitan strategies have attempted to meet these demands, promoting urban intensification as a means to provide diverse housing close to existing services and public transport, and to make this car dependant city more environmentally sustainable. The strategy Melbourne 2030, released in 2002, aimed to encourage 70 per cent of new dwellings within the existing city footprint, primarily located in several well serviced and connected ‘activity centres’ (Department of Infrastructure, 2002). However a review of building activity from 2004 to 2010 showed that only 47 per cent of new dwellings were within the existing city, and that these were not mostly concentrated in activity centres but evenly distributed throughout the urban fabric (Newton & Glackin, 2014). There seems to be a gap between the metropolitan strategies and the statutory zoning and codes used to implement them. Intensification of the existing suburbs does occur, but often it is of low quality and does not contribute to the public realm. This has contributed to a resistance from the community to new development.
The delivery of new housing in Melbourne in the last decade has followed the path of least resistance, whether in the form of greenfield development, the transformation of rural land to suburban housing or brownfield development, the transformation of former industrial areas into housing and other urban uses. Newton (2010) calls for a considered examination of something in between: greyfield development.

“Greyfields is a term used here to describe the ageing, occupied residential tracts of suburbs which are physically, technologically and environmentally obsolescent and which represent economically outdated, failing or under-capitalized real estate assets. They typically occur in a 5–25 km radius of the centre of each capital city and are service-, transport-, amenity- and employment-rich compared to the outer and peri-urban suburbs.” Newton (2010)

The large-scale redevelopment of the greyfields is a politically, socially and technically complex task, but it offers many advantages given the latent potential of the existing suburbs. Newton (2010) states that “the real challenge is associated with developing a workable model and set of processes for urban transformation of greyfield landscapes”.

Redeveloping the greyfields may also offer alternative housing typologies that are currently not very common in Melbourne. While greenfield sites offer detached houses on the periphery of the city and brownfield sites offer high-rise apartments in the centre, there has been a groundswell of interest in something in between. Driven by a range of interests, different groups from co-housing organisations to groups that meet through online platforms, these communities are actively looking for sites in the existing suburbs to develop into high density, low to mid-rise housing with some shared facilities. These groups currently face financial and statutory issues, but there is a growing interest from the public in this type of development.
What is Urban Coup?

At a meeting in March 2008 a group of like-minded folk gathered to discuss what living in such a community would be like. The group found they had a lot in common and decided to work together to build a new cohousing community.

Strong friendships have developed, and since the inaugural meeting we have drafted a constitution, as well as a number of important policies (these policies guide decision making, conflict resolution, communication, and joining and leaving). We hold regular working meetings and social events, and have hosted visits and consultations with members of other cohousing communities, developers, and advocates of cohousing. In June 2010 we became an incorporated body. Coup members include healthcare professionals, teachers, welfare sector workers, artists, architects, urban planners: all informed by a strong environmental ethic. The experience of cohousing communities in Australia and overseas suggests that the optimum number of households is 30, and this is our target. As it stands, we have around 20 households, with a prospective members list to help ensure we achieve the desired number.

And the name? No, 'Coup' is not a spelling mistake. The name reflects our desire to be part of a positive change (a coup if you will). We want to differentiate ourselves from cooperatives (co-ops); a concept which has a very different ownership structure than that which we intend to use. We also hope that our community will incorporate a chicken 'coop'.

Co-housing collective Urban Coup is actively looking for a site in suburban Melbourne

Online platform Citiniche connects potential apartment co-owners with each other and to architects and developers

Developers Assemble Projects hold workshops with potential future owners

Residents of the sustainable apartment complex ‘The Commons’ share a rooftop garden and a flexi car
A greener city

A spontaneous city

A 20-minute city
1.2.1 Problem statement

Driven by population growth, demographic changes and shifts in public preferences, there is currently an undersupply of diverse, high-quality housing options in the existing suburbs of Melbourne. Successive metropolitan strategies have attempted to guide intensification of the existing suburbs but have not been successful in directing the location and quality of intensification. Recent changes to residential zoning provide an opportunity to rethink how intensification is encouraged in Melbourne.

1.3 Three concepts

This thesis concludes with a strategic vision on how to guide the regeneration of the existing suburbs of Melbourne. The strategic aims of this vision are contained within three broad concepts – a 20-minute city, a spontaneous city and a greener city - that describe the city that Melbourne is and the city that it has the potential to become. It is possible to imagine that Melbourne strengthens these qualities through the process of greyfield regeneration. These concepts are elaborated further in chapter two.

1.4 Aim

This thesis aims to understand the process of intensification in Melbourne: where it occurs, of what kind and what is driving it. It then investigates different forms, locations and processes of intensification that support the strategic aims of the thesis. Then it aims to examine the existing statutory planning system and the proposed changes and how they relate to intensification. Finally it will suggest an alternative vision for guiding intensification of the existing suburbs of Melbourne, adding a new strategic layer to the current system to encourage these suggested forms and locations of intensification.
Shopping strip in inner Melbourne (Smith Street, Collingwood)
1.5 Research questions

This thesis focuses mainly on the intensification of the existing suburbs of Melbourne. While greenfield development is the path of least resistance and there are many exemplar projects for brownfield sites, the strategic redevelopment of greyfield areas is complex and requires more research (Newton & Glackin, 2014).

Through this thesis I hope to offer some suggestions for the following research question:

**How can the intensification of existing suburban areas be guided and coordinated to provide diverse, well-located housing options that contribute to the enhancement of the area as a whole?**

This can be broken up into several sub research questions, which are answered in each chapter:

1. How can Melbourne become a 20-minute city, a spontaneous city and a greener city?

2. What is urban intensification? Why? To what end? What are possible typologies of intensification? Possible benefits and disadvantages?

3. Where and what kind of intensification currently occurs in Melbourne? What are the driving forces behind this intensification?

4. How does the current planning system regulate intensification in Melbourne and what is the effect of the proposed changes to residential zoning?

5. What are the existing spatial characteristics of Melbourne? Which areas show potential for development or protection?

6. How can intensification be guided to enhance Melbourne’s characteristics as a 20-minute city, a spontaneous city and a greener city?
Inner-city building is necessary for keeping our cities vibrant and sparing the landscape. At the same time, it helps us to realise our sustainability ambitions. With the increasing volume of construction taking place in the rural landscape, the attractive alternation between nature and built-up area that is so characteristic of the Netherlands is threatening to disappear. At the same time, when it comes to building in the existing area, our country can also turn to a tradition. Now is the time to restructure the focus of the spatial planning, bring knowledge up to date and infuse this tradition with a new enthusiasm. It is definitely possible to increase the average percentage of inner-city building.

Furthermore, compact building presents opportunities to further develop the existing qualities of the city. It is here, in the city, that we can take full advantage of existing facilities and infrastructure.

In this publication, the Inner-City Building working party, working on behalf of the Board of Government Advisors PCRAP, not only shows the urgency, but also the opportunities, possibilities and advantages of compact building. This team of experts presents numerous good examples, offers various inspiring design recipes and makes recommendations in the area of knowledge exchange, approach and rules. Municipalities, provinces and the national government are called on to assign a higher priority to inner-city building. Compactly developed, spatially rich cities result in inspiring differences between the city and the surrounding countryside.
1. Introduction

2. Three concepts
   - How can Melbourne become a 20-minute city, a spontaneous city and a greener city?

3. What is intensification?
   - What is urban intensification? Why? To what end? What are exemplary typologies of intensification?

4. Intensification in Melbourne
   - What is the nature of intensification in Melbourne?

5. Zones and codes
   - What is the effect of the proposed changes to residential zoning?

6. Suitability analysis
   - Which areas show potential for development or protection?

7. Vision and implementation
   - How can intensification be guided to deliver the strategic aims of this thesis?

8. Conclusion
1.6 Thesis structure
The thesis begins by setting up a theoretical framework. Firstly, three concepts are defined that provide a broader context for the strategic aims of this thesis (Chapter 2). Then intensification is defined and the benefits and issues are discussed (Chapter 3), followed by a review of the types of intensification that occurs in Melbourne and the driving forces behind it (Chapter 4). The following chapter looks at the planning system in Melbourne, including an analysis of the proposed changes to the residential zoning system (Chapter 5). Then a suitability analysis of Melbourne is conducted, looking at the current patterns of housing, services and jobs, transport, green spaces and density (Chapter 6). Finally conclusions from this analysis are used to define a set of design principles, which when combined with a suitability analysis of the existing area give a set of strategic rules for guiding the intensification of this area, and suggestions for their implementation (Chapter 7). The thesis concludes with reflections on this proposal and what suggestions it might offer for the future redevelopment of Melbourne’s existing suburbs (Chapter 8).
1.7 Location

Melbourne is the second largest city in Australia after Sydney, and is the capital city of the state of Victoria. It is a cultural and political regional (and national) centre valued for its multiculturalism and vibrant food, art and music scenes. It is predominately suburban and has an urban footprint stretching 100 kilometres from north to south and 90 kilometres from east to west (Spiller, 2013). It is a very monocentric city, with the CBD or Central Business District forming the financial and cultural core, supported by radial train, tram and road networks. The centre and inner suburbs are denser in terms of built form, services and public transport access than the periphery, and land prices are correspondingly higher in the centre than the periphery.

Planning is largely managed at the state level and implemented through 31 different municipalities or ‘local government areas’.

Left: Maps of Australia and Victoria showing Melbourne’s location (Source: Google Maps)

Below: Diagram showing Melbourne’s radial development (Source: Managing Melbourne, Townsend, 2012)
1.8 Historical patterns of development

It is possible to observe two main patterns in the historical development of Melbourne: the outwards spread from the city centre, and the incremental change that has occurred once the suburbs have been established.

1.8.1 Outwards spread

Founded in 1835, Melbourne was laid out on a grand grid in 1837, with land surveyed and sold at public auction (City of Melbourne, 2007). In the 1850s the discovery of gold in nearby Ballarat and Bendigo led to an enormous growth in wealth and population, fueling a boom that lasted for forty years. This culminated in the “land boom” of the 1880s, with speculative development and the rapid inflation of land prices (Lewis et al., 2005). The city spread to the north, east and south, with terrace houses and cottages for the working classes and detached villas for the middle classes. The government invested heavily in urban infrastructure, especially in an extensive rail network.

The next stage of development came with the introduction of the tram in the 1890s. First horse drawn, then on cables in the ground and finally electrified, these tram lines were initially built by private development companies before becoming government-owned at the start of the twentieth century. Suburban development went hand in hand with the introduction of new tramlines, with the lines often owned by property developers. This mode of development continued up until the 1950s in what could be called truly ‘transit orientated development’.

Post war Melbourne experienced another property boom, and now that car ownership was widespread, development was no longer tied to rail and tramlines. This period saw the birth of the Australian dream: home ownership as an expression of success and security. Prosperity and advances in construction such as prefabrication made this dream accessible to most, with the city continuing its outwards spread.

This mode of suburban development continues today with 53% of new homes built as detached houses in housing estates on the periphery of the city. This process has been streamlined over time, with volume builders achieving incredible efficiencies in cost and time. However the limits of this model are becoming evident. Although the upfront cost of new dwellings is very low compared to those in the existing city, residents face ongoing costs in time and money relating to transport and lack access to services, jobs and public transport.
Melbourne is now entering the next stage of development in the form of intensification. Residents began to return to live in the central business district in the 1990s, spurring a desire for high-rise living. Over 25 new residential towers have been approved since 2010, including one set to be the tallest residential tower in the southern hemisphere at 110 stories. More modest scale intensification is also occurring in the existing suburbs, which is discussed in the next section.

1.8.2 Incremental change

Melbourne has not only developed outwards, but also changed incrementally within the existing city form. The gridded pattern of streets and house plots has allowed for incredible flexibility, with the current suburbs not exhibiting cookie-cutter repetition but variety in housing age and type. This process of historical development can be seen in this typical block in Thornbury.

Lots were subdivided in 1884 but still only partially occupied in 1900. By the 1950s the lots along High Street had been subdivided into many narrow shop fronts, typical of retail strips along main roads with trams. The remaining lots have been filled by detached houses, and some of them have been subdivided to form smaller lots. The period from 1968 to 1973 is known as the ‘flat boom’ in Melbourne as single houses were often demolished to make way for blocks of six to ten flats. Known as ‘six packs’ this type of development was not well received by the general public. Incremental replacement has continued to the present, with demolished houses often replaced by one, two or three detached houses on the one lot.
Shopping strip in inner suburb (High Street, Northcote)
Residential street in established outer suburb (Thomastown)
1.9 Study areas

Given the large physical size of the city, this thesis works through several scales, beginning with a 60 by 60 kilometre square [1], which encompasses the central part of metropolitan Melbourne. From here the main study area is a ten by 30 kilometre slice of the city [2], focusing on the north side of the city. Stretching from the CBD in the centre, through Preston, to Epping in the north, this segment of the city was traditionally a working class area but has experienced significant gentrification in the suburbs close to the centre in recent years. As a consequence this area demonstrates a range of socio-economic conditions. These two scales will be used to complete a spatial analysis of the existing characteristics of the city.

The next study area is in the middle section of this slice, taking in the middle suburbs of Brunswick, Coburg, Thornbury and Preston [3]. This ten by five kilometre area includes parts of the local government areas of Moreland, Darebin and Banyule. This scale will be used for a more detailed analysis of the current and proposed residential zones, for a suitability analysis, and finally for the development of strategic rules for this area. The final study area is a three by two kilometre area which contains the suburb of Thornbury, cut through by the Merri creek, St Georges Road and High Street [4]. This scale is used to test out the proposed changes to the planning framework. Finally, two test sites are chosen within the suburb of Thornbury to reflect on the proposed changes.

While this thesis focuses primarily on the middle suburbs in the north of the city, and reflects the conditions particular to this area, it is possible that conclusions drawn and strategies proposed in this area could be applicable to similar situations in the city as a whole.
optimistic about the future of his business and his place in the Binckhorst. “You’re an unpaid garbage collector of The Hague for almost forty years, but that doesn’t count anymore.”

We arrive unannounced at ANDO BV, a printing shop on the Mercuriusweg. ANDO, set up in 2005, is synonymous for a good graphical product, according to director Fokko Tamminga. “Especially now, in this time of superficiality,” he points to the Hague’s tradition as a design city. Its relationship to the Binckhorst is very important for his printing shop. It’s close to the centre and close to the big creative units such as the Caballerofabriek and Bink 36. “People even come here by bike. Things should reinforce one another. Only then you get really special products.”

Tamminga advocates the mix of living and working. What does he imagine the future Binckhorst’s role to be? “You get the feeling that there is no space for anything. They are all large, generic units in an office environment,” says the graphic designer. “Don’t become a creative city by setting up a large design unit somewhere. To create a whole, you need other business too. Like in Italy, you see all kinds of small shops. Only good combinations can do justice to the meaning of a story. Design and paper is just such a combination.”

What determines our value is that we have a lot of opportunities and know-how. We are the largest source of knowledge in the Netherlands. And people respect the fact that we are small and it’s more than just efficiency; if you find joy in your work, you don’t need to make the most money.”

Speaking of the Italian feel down the street is the Atea Paper factory. Founded in 1913, the business has been in its present location since 1950. Alessandro Bruti took over the oldest, still functioning family business in the Binckhorst from his father Urbano Bruti. Inside, we land in the middle of the industrial revolution: you stumble across rolls of paper and machines, designed and built right there on the spot. They still use handwritten invoices. We ask Alessandro what he thinks of the recent developments in the Binckhorst: “The Binckhorst is the motor of The Hague. Despite the circumstances, crises and fluctuations in the market, there are a hundred family businesses next to one another. We survive by working hard and always delivering quality. We can be flexible because we have very few operational layers. It’s the combination of old and new, hard and soft, that makes this place so special. That’s why we have to protect it and be proud of it.”

Bent over his basil patch right in the middle of the factory, Alessandro tells us about his other passion, Dramtune. “It all started very small-scale. I sometimes made traditional meals for friends here in the factory and invited some musicians along. Italian and Irish music, very informal, just for fun. It was really a musician’s party that others could join. And that’s how it grew, very spontaneously, actually a spontaneous kind of network.”

Our meeting with Joan van Oeveren is also spontaneous. We speak with her through the window of her ground-floor flat in a strange, former housing block on the Binckhorstlaan, right in the middle of the car dealers and industry. Joan’s window looks out onto Sint Barbara, a common’s cemetery. In the ‘New Binckhorst’ plans, a city park will replace her house. “I came here thirty-five years ago after I had a stroke. This is where I met my husband. My daughter lives three houses down the road with my grandchildren. It’s quite nice and calm here; there’s the cemetery out front and my garden in the back.” Joan goes regularly...
Three concepts
A greener city

A spontaneous city

A 20-minute city
The project of this thesis is contained within a framework of three broad concepts - a 20-minute city, a spontaneous city and a greener city - that reflect on the city that Melbourne is and provide inspiration for the city it could become. These concepts are much broader than the scope of this thesis, but can be considered ‘inspirational images’ (Secchi & Viganò, 2009) to guide general policy decisions. These three concepts are overlapping and interrelated. Within each concept I have defined aims that I hope to address in my strategy for guiding the intensification of the existing suburbs of Melbourne.

2.1 A 20-minute city

The 20-minute city is a core principle in *Plan Melbourne* the current metropolitan strategy for Melbourne, released in 2014. The strategy aims to create a city of neighbourhoods where residents “have access to local shops, schools, parks, jobs and a range of community services within a 20-minute trip from [their] front door”, whether travelling by foot, bicycle or public transport (The State of Victoria, 2014). Given that the inner and a significant part of the middle suburbs are well served by public transport, local shopping strips and community services, this thesis focuses on both adding additional dwellings to these well served areas, but also encouraging a mix of programmes such as offices and retail alongside housing.

This concept first appears in the *Portland Plan* of 2010, but relates more specifically to walkability (City of Portland, 2010). The map on the left of Portland, USA highlights areas that have relatively good, walkable access to commercial services and amenities. This concept was extended to a broader concept of liveability and access in the Plan Melbourne strategy, focusing on public transport and cycling alongside walking. *Plan Melbourne* also states that “creating a city of 20-minute neighbourhoods relies on creating the market size and concentration that can support a broad range of local services and facilities” (The State of Victoria, 2014). One way to support this concept would be to promote the intensification of the well-serviced existing suburbs. However, this runs counter to another core principle of the current metropolitan strategy of “protecting the suburbs”, with the current metropolitan strategy using the new residential zones to preserve the suburbs as they are. New residential development is directed instead to key urban renewal sites.
THE 20 MINUTE NEIGHBOURHOOD

Variety of Housing Types

Playground
Parks and Greenery
Community Centres
Café
Employment Centres
Local Bus Services
Public Transport to Key Centres
Local Gathering Places
Local Shops and Services
Day Care Centres and Schools
Cycling and Walking
Shared Community Open Space Including Food Growing


The information on the map was derived from digital databases on the City of Portland, Bureau of Planning and Sustainability GIS. Care was taken in the creation of this map but it is provided "as is". The City of Portland cannot accept any responsibility for error, omissions, or positional accuracy, and therefore, there are no warranties which accompany this map.
close to the CBD such as Fishermans Bend. In contrast to the current metropolitan strategy, this thesis seeks to reconsider the new residential zones in order to encourage housing options close to existing public transport and services in the existing suburbs in order to reinforce the concept of the 20-minute city.

2.2 A spontaneous city

The spontaneous city addresses two main ideas. Firstly, residents should participate directly in the shaping of their own city. The rise of community led ‘bottom up initiatives’ and in the localism movement in the UK are both examples of this tendency. Secondly, planning frameworks should be reconsidered so that they provide certainty and coherence on one hand but flexibility and freedom on the other. Flexible plans and design coding are emerging as an alternative to rigid masterplans, as a way to deal with the changing dynamics of the city while providing some guidance to help ensure the quality and coherence of development.

The term ‘spontaneous city’ comes from the Manifesto for the Spontaneous City by Urhahn Urban Design (2010). This concept arose from the frustrations that Gert Urhahn experienced working within the Dutch planning context. The Netherlands has a long history of highly developed spatial planning, resulting in high quality, ordered development, but little room for innovation, direct citizen involvement or surprise. He proposes instead a new model for urban development in the twenty-first century:

“...The Spontaneous City is indeed shaped by its occupants, in a never-ending process of transformation, growth and adaptation. Individuals and groups, comprising both residents and business people, re-use or re-organise spaces in apartment blocks, workplaces, parks and streets – or on the grounds of wind farms and companies. Urban planning professionals work in close collaboration with the project initiators. They forge a path between individual choice and common interest. Government and market work closely together, but with a different focus: the initiatives, creative energy and investment capital of the end user. The new urban planner must break through an historical trend of design that is always increasing in scale, involving collaboration with only the bigger partners. It’s the city user’s time.” Urhahn Urban Design (2010)

Australian cities, in contrast to their Dutch counterparts, have a long and continuous history of being spontaneous cities. Development since the post war period has focused on individual home ownership, and the suburban pattern of development has allowed for flexibility and adaptability in redevelopment, with a typical middle suburban block consisting of detached houses, townhouses and apartments from different decades and architectural styles. Individual homeowners often act as developers, with incremental infill development and the cottage development...
industry that supports it shaping the form of Australian cities. Although this type of development can be criticised as it often produces low quality results and does not encourage more coordinated mid-rise developments, it does allow the citizens to participate in the development process.

In Melbourne this scenario is set to change with the introduction of the new residential zones. Aimed at protecting the suburbs from development, there is concern from planning professionals that these new zones will limit small to medium sized redevelopments by individuals and small groups, pushing them out of the development process (Gray, 2013). New housing would be primarily delivered in the form of apartment complexes by large development companies. If Melbourne is to remain a spontaneous city it is important to consider how residents can continue to be involved in the development process.

A more institutionalised approach to the spontaneous city can be seen in the neighbourhood planning movement in the UK. The Localism Act of 2011 gave communities the ability to draw up neighbourhood plans and to have more of a say about what type of development occurs in their area (Department for Communities and Local Government, 2012). Communities are able to choose where new houses, offices and shops will be built, have their say on what new buildings will look like, and grant planning approval to buildings they believe should go ahead. Support is given from the government both in the form of advice and support from planning professionals and grant payments to cover the costs incurred by the groups while they create the neighbourhood plans. There has been significant interest from the community in this process, both from leafy, middle-class suburbs looking to manage and resist development, and from lower income neighbourhoods looking to improve their areas through a meaningful engagement with the development process (Crabtree & Mackay, 2013). Neighbourhood planning could be instrumental in involving communities in Melbourne in the future development of their own neighbourhoods, contributing to a more spontaneous city.
3. Create collective value

4. Be user orientated
Most important is the need to involve high quality parcel designers to creatively interpret codes and produce designs which accord with them without the need for significant time consuming negotiations (fig 1.28 Hastings).

Moreover, compliant schemes are likely to receive permissions without delay, whilst non-compliant schemes will be further held up – providing a ready incentive to deliver quality. Experience also shows that over time the process of applying for and obtaining reserved matters consents becomes more efficient, whilst it is also expected that increased familiarity of teams with coding will increasingly streamline their preparation.

Importantly, other forms of design guidance showed similar costs and benefits, with significant up-front investment offset by increasingly efficient processing of phases as developments commence.

**Statement**

Development should present a fine urban grain with residential plot widths in accordance with the following:

- Houses and maisonettes, minimum plot width 4.5m, maximum 8m.
- Commercial buildings and residential apartment blocks must maintain a vertical proportion to elevations. This can be achieved through vertical elevational features, changes in material, set backs of building line and/or changes in roofline as illustrated, where the width(s) is less than the height to the building shoulder (y).
- Entrances to non-residential buildings must be created a maximum of 15m apart measured along the street.

**Justification**

- To provide a varied elevational treatment that is appropriate to Hastings character.
- To create an adaptable pattern of development that can accommodate incremental change.
- To provide a continuity of enclosure of streets and other public spaces and to secure private open space within blocks.
The other aspect of the spontaneous city relates to planning tools that can guide development. On one hand the planning system should create a rigid framework for development, to provide certainty for developers and residents and to encourage quality and coherence in the built structures and public space. On the other hand it should be flexible enough to allow for individual expression, variation and surprise, be able to adapt to unforeseen changes and evolve over a period of time. Flexible plans and design coding are planning tools that have the potential to create such conditions.

Flexible plans have emerged as an alternative to rigid masterplans. Built up of urban rules they create a framework to guide development without prescribing the exact built form. An example of such a plan is the flexible plan for Borneo Sporenb urg, a new residential district on two peninsulas in the harbour of Amsterdam. Designed by Dutch landscape and urban design office West 8, it provides a framework of strict but imaginative rules that helped deliver a very varied streetscape for this dense development of single-family row houses on the water (CABE, 2007). Guidelines for streetscape, parking, plot width, building height and private open space were enforced. Over 100 architects were involved, with design by different architects scattered throughout the development so that the streetscape appears varied. In order to provide coherence to the development, a limited palette of materials were allowed. This example of a flexible plan has managed to strike a balance between flexibility and rigidity, with the variety of architects and builders involved contributing to a lively and welcoming development while the set plot width and material palette bring coherence.

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<td>Land uses</td>
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<td>COLLABORATE</td>
<td>Policy hierarchy</td>
<td>Streets</td>
<td>Certainty</td>
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<td>MASTERPLAN</td>
<td>Market</td>
<td>Blocks</td>
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<td>CODE</td>
<td>Stakeholder</td>
<td>Plots</td>
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Left: A flexible plan with design rules leads to a varied by coherent housing development. Borneo Sporenb urg by West 8 (Source: Carlos del Rosal)

Left: Coding to create an adaptable pattern of development that can accommodate incremental change for Hastings in the UK (Source: Department for Communities and Local Government, 2006)

Right: Framework of design coding process (Source: Carmona et al., 2006)
This process of assigning rules to guide a development but do not prescribe the exact outcome is known as design coding. Design codes can play a major role in delivering a better quality development, and a more certain design and development process. If properly managed, they can provide a framework for stakeholders to integrate their activities, providing a more co-ordinated and consensus driven process (Department for Communities and Local Government, 2006). Coding as a means to regulate the built environment has been used since Roman times and was used in the rebuilding of London after the Great Fire of 1666. In this instance typologies of streets with matching buildings were established, and regulations led to straightened, paved streets and consistent building heights and cornice lines (Carmona et al., 2006). There has been increasing interest in design coding in the UK in the last decade as a means to guide large scale housing development, reflecting a wider international interest in the potential for design codes to deliver higher quality urban design.

A design code is a set of design components with rules to guide their use in order to generate the development of a site or place, whether an established area or new development. They are built on a design vision contained in a masterplan or neighbourhood plan and provide a set of requirements to achieve this vision:

“*A design code is an illustrated compendium of the necessary and optional design components of a particular development with instructions and advice about how these relate together in order to deliver a masterplan or other site-based vision.*” (Department for Communities and Local Government, 2006).

Design codes, when used as a means to guide development towards a design vision for a particular area have the potential to deliver high quality urban design for the redevelopment of Melbourne’s suburbs.

This thesis aims to create a spontaneous city in two ways: by reengaging the city user in the development process and by providing suggestions on how to adapt the planning frameworks so that they deliver more certainty for developers and residents and higher quality urban design but also so that they allow for variety, flexibility and freedom.
5.1 Current trend scenario

5.4 Activity centre scenario

5.6 Super CBD scenario

5.7 Inner city scenario

5.8 Polycentric city: middle centres scenario

5.10 Linear development scenario
Consolidated precinct

Hybrid precinct

Dispersed precinct
2.3 A greener city

In the context of this thesis ‘a greener city’ addresses two main ideas. Firstly, it looks at the relationship between environmental sustainability and the city by considering the built form and its relationship to public transport, and the steps that can be made at the scale of the building, street and neighbourhood that contribute to environmental sustainability and resilience. Secondly, it aims to strengthen the quality and quantity of public green spaces in Melbourne aiming to ensure that residents have access to a variety of public parks, communal gardens and reserves.

In the discussion paper Melbourne, let’s talk about the future released by the state government in the lead up to the release of the current metropolitan strategy, ‘environmental resilience’ was one of nine main principles considered. It states that “we need to be able to respond to changing environmental and climate conditions, ensure development does not undermine natural values, use resources more efficiently and produce less waste” (Ministerial Advisory Committee, 2012). It highlights several key issues and possibilities such as reducing carbon emissions through lower impact transport (public transport, cycling and walking), protecting existing green areas and adding creating new ones to reduce the heat island effect and focusing on energy efficient urban design and buildings.

Given that this thesis focuses on the intensification of the existing suburbs, a key contribution to environmental resilience is the distribution of this new development in order to reduce transport energy use and greenhouse gas emissions. Released by the state government in 2009, the report *Macro-Urban Form, Transport Energy Use and Greenhouse Gas Emissions*, compares different strategies for locations of intensification and their affect on energy use and greenhouse gas emissions (Department of Transport, 2009). It compared ten different strategies for how the city form would develop until 2031 such as ‘non-intervention scenario’, ‘super CBD scenario’, ‘polycentric city scenario’ and ‘linear development scenario’. It found that ‘inner city scenario’ performed best against their criteria. This scenario focuses all new development to the transport rich areas (well connected by the current tram and train networks) close to the centre of the city. This can be seen to support the intensification of the inner and middle suburbs that are well connected to the existing tram and train networks.

Another factor that relates to environmental sustainability is the way in which greyfield redevelopment occurs. In the report *Understanding Infill: Towards New Policy and Practice for Urban Regeneration in the Established Suburbs of Australia’s Cities* (Newton & Glackin, 2014) the authors describe current infill development as piecemeal and suboptimal and call for a more proactive approach to greyfield redevelopment. Regeneration should incorporate broader based renewal: “not only of housing, to reflect best practice sustainable design, but also that of the associated infrastructures: next generation energy, water, waste and transport systems”. They consider the scale of redevelopment important. Regeneration
should be larger than the individual housing plot, instead there should be a proactive search for precincts: “clusters of contiguous residential properties that are poorly performing physically, technologically and environmentally” (Newton & Glackin, 2014).

The environmental benefits of a precinct-based approach to the redevelopment of the existing suburbs can be seen in the housing project Heller Street Park and Residences in Brunswick, a suburb of Melbourne. By redeveloping a larger site into ten townhouses this precinct was able to build a shared grey water recycling system, which is used to water the park adjacent to the properties. It can be imagined that other redevelopment projects of this size or larger could contribute to environmental resilience through efficiencies in updating water, waste and energy generation systems at this scale.

Melbourne is known for its park network and leafy suburban streets. The rivers that cut through the northern suburbs such as Merri Creek, Darebin Creek and Maribyrnong River form ecological corridors and cycle commuting routes to the centre of the city. However the middle suburbs are not as well served by green public spaces and treed streets as the inner suburbs. The intensification and regeneration of the existing suburbs provides an opportunity to increase the quantity and variety of green spaces, both to provide better amenity for residents and to strengthen the ecological structures for increased environmental resilience.

The existing suburbs benefit from the green space provided by backyards. However intensification over the last thirty years often takes the form of a second detached house built at the rear of existing one, increasing the impermeable surfaces in the area and reducing the amount of green space. When backyards remain they are often underutilised, with busy lifestyles leaving little time for garden maintenance. Higher density development could allow for the creation of communal green space, adding a new typology of green space to the city. The intensification of precincts could also contribute to the greening of the immediate area, with developer contributions allowing for the introduction of more trees to the streetscape and pocket parks.

An overall increase in population would also require the upgrading and enlarging of urban parks as apartment dwellers have more need for such public open space. Such parks should be strategically located both close to high-density development and also close to existing green spaces in order to strengthen the ecological networks. Such upgrades should not just relate to the physical space, but also the programming of these spaces. Each park should have its own character and host different events, festivals and activities.
This thesis aims to contribute to the greener city by focusing intensification in existing suburbs that are well serviced by public transport, which has been shown to reduce transport energy use and green house gas emissions. It aims to also support resilience by encouraging greyfield regeneration at the scale of the precinct instead of the individual plot, which has the opportunity to provide efficiencies in updating energy, water and waste systems. Finally it contributes to a greener city by adding more variety in the types of green spaces available, greening streetscapes through developer contributions and improving existing green spaces by upgrading both their landscaping and the activities that take place there.

These three concepts – a 20-minute city, a spontaneous city and a greener city – create the framework for my thesis and help define its strategic aims. The 20-minute city suggests that new housing should be located close to the existing public transport network and that a mix of programmes such as offices and retail should be added alongside housing. The spontaneous city suggests that residents should be more involved in the development process and that the planning system should be adapted to allow for more certainty and coherence, but also more flexibility and freedom. A greener city suggests that the capacity of the existing suburbs should be unlocked in order to reduce transport energy use and greenhouse gas emissions. It also suggests that greyfield regeneration should occur at the scale of the precinct for increased efficiencies in the sustainable renewal of water, energy and waste systems and that intensification should also lead to an upgrade in the quality and variety of green spaces. Consequently, these strategic aims structure where intensification should occur, what kind of intensification should occur and the way in which the planning framework could encourage this kind of development.
A 20-minute city

- locate new housing close to existing public transport
- encourage a mix of programmes alongside housing

A greener city

- unlock capacity of suburbs to reduce transport energy use
- enlarge and improve Melbourne’s public green spaces

A spontaneous city

- involve city users in the development process
- adapt planning processes for certainty and flexibility
- precinct scaled redevelopment for efficiencies in regeneration
Inner suburban intensification (Collingwood)
What is intensification?
urban intensification

smart growth
typomorphology
density studies
transit orientated development
compact city
urban containment
retrofitting suburbia
public realm quality
urban capacity studies
intensification threshold
mediating impact
infill
greyfields
brownfields
density studies
typomorphology

Page from Manifesto for the Spontaneous City by Urhahn Urban Design (2010)
3.1 A definition

Intensification is one aspect of compact city policy that encourages the addition of more dwellings to existing urban areas instead of greenfield sites. It has been described both as a process where existing suburban and urban areas are intensified, both in terms of built form and activity (Williams, 1999), and as encompassing three main concepts: “an increase in population, an increase in development, and an increase in the mix of uses within the city boundary” (Burton, 2002). What is missing from these definitions is an understanding of thresholds and qualities. How much increase in density is sufficient to deliver the benefits that intensification has been suggested to provide? Should densities increase uniformly across the existing suburbs or be concentrated in certain areas? Does the morphology of building types play a role in creating benefits suggested?

This chapter lays out the suggested benefits of intensification and potential issues arising from intensification policy. It then mentions intensification as a means of achieving dwelling targets in strategic plans, how we can ensure intensification happens in the right places and give suggestions of housing typologies that might be better suited to achieving a more desirable quality of intensification.

3.2 Suggested benefits and issues

Urban intensification is seen as a way to deliver sustainable development. It has been suggested that denser communities have the potential to support walking, cycling and public transport, lessening the reliance on the car (Banister et al., 1997). Denser development within the city boundaries also saves greenfield land from development (Breheny, 1996). Intensification is also proffered to have social and economic benefits: goods and services are more equitably distributed (Elkin, 1991), infrastructure costs are lowered (Newman, 1992) and there is the possibility for increased vibrancy, vitality and social interaction on the streets (Katz et al., 1994).

However intensification policies are often difficult to implement and their effects are complex. Additionally, metropolitan strategic goals for intensification are often at odds with local concerns, with reports of traffic congestion, poor environmental
quality and a perception of overcrowding (Williams, 1999). In the context of low-density Australian cities the scope for consolidation has appeared almost unlimited but there are calls to identify and recognise maximum densities and land and infrastructure capacities (Seale, 2004). While it is widely agreed that there is a relationship between built form and environmental sustainability (Breheny & Rookwood, 1993), which suggests a relationship between intensification and increased sustainability, there are suggestions that this relationship may have been overstated, especially between transit-orientated development and reduced car use (Timmermans, 2007).

3.3 A numbers game: infill targets

The intensification of development within the existing city has been an important aspect of a succession of metropolitan strategies for each Australian capital city. The discussion focuses more on promoting ‘infill’ which is defined as “new development that occurs within established urban areas where the site or area is either vacant or has previously been used for another urban purpose” (NSW Government, 2010, p. 272). As part of these strategies, each metropolitan area is set an infill target to be achieved over a timespan of typically 20 to 30 years (Newton & Glackin, 2014). However, none of these strategies have defined how the targets were derived or how they should be measured.

Setting targets for the amount of new dwellings in existing suburban areas is an important part of implementing these strategic plans, in order to help with the housing shortage in Australian capital cities. However such targets have been a cause of some conflict between the state government that is requiring them and the local government and residents who deal with the effects of their implementation. It is interesting to investigate ways to encourage better quality housing that responds to local needs while still delivering the total number of dwellings required.

3.4 Measuring intensification

When does any increase in density become intensification? Appropriate figures or values for intensification are not universally defined and theorists are rarely specific and often differ on this topic. Friends of the Earth, an environmentalist group, argue that densities between 225 and 300 people are required to achieve sustainability objectives (Burton, 2002). By means of comparison most new construction in the UK occurs at a density between 47 and 94 people per hectare (Bibby & Shepherd, 1990). The images on the right compare the population densities of different suburbs in Melbourne to international examples. Although there is not one figure for the ‘right amount’ of intensification, Australian cities are generally of a lower density than many international examples and there is potential to increase the density for greater environmental and social benefits. However the level of intensification should
Borneo, Amsterdam
Source: City of Melbourne (2010)
200 p/ha

Bercy, Paris
Source: City of Melbourne (2010)
200 p/ha

Coin Street, London
Source: City of Melbourne (2010)
200 p/ha

Battery Park, New York
Source: City of Melbourne (2010)
240 p/ha

Eixample, Barcelona
Source: City of Melbourne (2010)
351 p/ha

Thomastown, Melbourne
Source: ABS (2011)
23 p/ha

Thornbury, Melbourne
Source: ABS (2011)
32 p/ha

Fitzroy, Melbourne
Source: ABS (2011)
45 p/ha

Southbank, Melbourne
Source: City of Melbourne (2010)
58 p/ha

CBD, Melbourne
Source: City of Melbourne (2010)
108 p/ha
be appropriate for the existing area and be compatible with cultural perceptions of density.

### 3.5 Intensification in the right places

An important aspect of intensification is how it is distributed across the city. When considering transport related arguments for intensification, there is a preference for ‘decentralised concentration’ either along transit corridors or in higher density nodes or ‘activity centres’ close to train stations (Burton, 2002). There may be more support for local services and facilities in a higher density cluster and more likelihood of creating a walkable community. In a similar way the arrangement of patterns of density across a city might be more important for energy efficiency than overall density levels.

> “Comparative analysis of different structures suggests that an energy-efficient settlement pattern would consist of small- to medium-sized settlement clusters. Within settlements, overcentralisation of employment and services would be avoided. Instead, residential areas would be planned around more dispersed clusters of employment and services in relatively compact ‘urban subunits’.” (Owens, 1986)

In their study of intensification within the existing suburbs of Melbourne, Newton et al. (2011) found that while formal strategies included the redevelopment of large land assemblages in activity centres or along transit corridors, as much as 35 per cent of new development happens informally outside of these areas. Given the lack of a guiding model to drive this process, such infill development is often fragmented and sub-optimal. They suggest that forming precincts of intensification by assembling the suburban blocks might provide opportunities for more diversity of housing types and uses, and provide infrastructural and construction efficiencies.

### 3.6 Building typologies

The consideration of the design of the built form is an important part of intensification policy, especially if the aim is to achieve street vitality and social integration. Counter to the idea that high density means high-rise, there is wide agreement that mid-rise and low-rise high density development is most suitable for the compact city (Burton, 2002). Through these forms it is possible that each dwelling has an entrance on the ground level and access to a communal or private green space. Traditional urban land use such as streets and squares encourage walkable neighbourhoods and provide conditions for social interaction. It has also been suggested that compact forms such as terrace houses and low-rise apartments have energy efficient advantages (Newton et al., 2000).
<table>
<thead>
<tr>
<th>Suburban row houses</th>
<th>Aerial photo</th>
<th>Image</th>
<th>Location; former site use</th>
<th>Current mix of uses</th>
</tr>
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<tbody>
<tr>
<td>Belgium</td>
<td><img src="image1" alt="Aerial photo" /></td>
<td><img src="image2" alt="Image" /></td>
<td>Outer suburban; formerly farmland</td>
<td>Row houses with large back garden</td>
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<td>Realm</td>
<td><img src="image3" alt="Aerial photo" /></td>
<td><img src="image4" alt="Image" /></td>
<td>Inner suburban; formerly the grounds of a convent</td>
<td>Row houses with courtyard</td>
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<tr>
<td>Donnybrook Quarter</td>
<td><img src="image5" alt="Aerial photo" /></td>
<td><img src="image6" alt="Image" /></td>
<td>Urban; formerly post war housing</td>
<td>Hybrid terrace/courtyard houses; retail and office spaces</td>
</tr>
<tr>
<td>Borneo Sporenburg</td>
<td><img src="image7" alt="Aerial photo" /></td>
<td><img src="image8" alt="Image" /></td>
<td>Greenfield</td>
<td>4 family houses with back garden</td>
</tr>
</tbody>
</table>

Each dwelling is designed by a different architect, bringing variety to the streetscape.

Lessons Intensification in an existing suburb in Melbourne. Development is focused on a pedestrian street. Design rules are used to create a consistent development with different architects.
<table>
<thead>
<tr>
<th>Ratio entrances to dwellings</th>
<th>Height; Frontage</th>
<th>Variation</th>
<th>Shared facilities</th>
<th>Car parking</th>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1</td>
<td>3 and a half stories; Facing street, 2m setback</td>
<td>Each building different architect, relatively consistent material pallet</td>
<td>Park at rear</td>
<td>Single garages and on-street parking</td>
<td>Each dwelling is designed by a different architect bring variety to the streetscape</td>
</tr>
<tr>
<td>1:1</td>
<td>3 stories; Facing street, 2m setback</td>
<td>Some variation in building typology, consistent material pallet</td>
<td>None</td>
<td>Single garages</td>
<td>Intensification in an existing suburb in Melbourne</td>
</tr>
<tr>
<td>1:1</td>
<td>2 and 3 stories; On street</td>
<td>Some variation in building typology but reads as one building</td>
<td>Pedestrian access lane</td>
<td>No parking</td>
<td>Development is focused on a pedestrian street</td>
</tr>
<tr>
<td>1:1</td>
<td>3 and a half stories</td>
<td>Each building different architect, relatively consistent material pallet</td>
<td>Park at rear</td>
<td>Single garages and on-street parking</td>
<td>Design rules are used to create a consistent development with different architects</td>
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<tr>
<td>B. Apartments</td>
<td>Aerial photo</td>
<td>Image</td>
<td>Former site use</td>
<td>Current mix of uses</td>
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<td><strong>The Saxon</strong></td>
<td><img src="image1" alt="Aerial photo" /></td>
<td><img src="image2" alt="Image" /></td>
<td>Greyfield: retail</td>
<td>26 apartments, ground floor retail</td>
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<td>Brunswick, Melbourne</td>
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<td><strong>The Commons</strong></td>
<td><img src="image3" alt="Aerial photo" /></td>
<td><img src="image4" alt="Image" /></td>
<td>Greyfield: light industrial</td>
<td>24 apartments, 2 studios, 1 cafe</td>
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<tr>
<td>Brunswick, Melbourne</td>
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<tr>
<td><strong>K2 Apartments</strong></td>
<td><img src="image5" alt="Aerial photo" /></td>
<td><img src="image6" alt="Image" /></td>
<td>Greyfield: light industrial</td>
<td>96 one and two bedroom apartments</td>
<td></td>
</tr>
<tr>
<td>Windsor, Melbourne</td>
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<tr>
<td><strong>De Wolk</strong></td>
<td><img src="image7" alt="Aerial photo" /></td>
<td><img src="image8" alt="Image" /></td>
<td>urban; formerly 19thC housing</td>
<td>24 apartments, 27 underground car parks, a roof garden and a meeting room</td>
<td></td>
</tr>
<tr>
<td>Amsterdam, NL</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ratio entrances to dwellings</td>
<td>Height; Frontage</td>
<td>Variation</td>
<td>Shared facilities</td>
<td>Car parking</td>
<td>Lessons</td>
</tr>
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<tr>
<td>1:26</td>
<td>2 and 6 stories</td>
<td></td>
<td></td>
<td>Underground car park</td>
<td>Maintains character of high street by retaining facade and fine grained plot size</td>
</tr>
<tr>
<td>1:24</td>
<td>5 stories; Plinth on street, rest of building set back</td>
<td>One cohesive building, consistent material pallet</td>
<td>Rooftop garden, car</td>
<td>No car-parking, 1 shared car, 65 secure bike parks</td>
<td>A shared flexicar and location next to train station removes need for car parking</td>
</tr>
<tr>
<td>1:24</td>
<td>6 and 9 stories; does not front the street</td>
<td>Variation in the facades, consistent materials</td>
<td>Communal garden, grey water recycling</td>
<td></td>
<td>Scale of development allows for shared facilities such as greywater recycling and garden</td>
</tr>
<tr>
<td>1:4</td>
<td>5 stories; zero set back</td>
<td>One cohesive building, consistent material pallet</td>
<td>roof garden, meeting room</td>
<td>27 underground car parks</td>
<td>Maximises doors on the street and minimises impact of car park entrance</td>
</tr>
</tbody>
</table>
When dealing with high-density dwellings, the quality of the development is especially important both for the amenity of the residents and the neighbourhood. However it is difficult to regulate for the quality of built form. A good way to promote architectural quality is to look for exemplary examples. The tables on the previous pages give examples of exemplary high-density residential projects and attempt to extract characteristics of each example that make them successful. In most examples, the buildings face the street and have little or no set back, reinforcing the urban space of the street. An active street frontage is also important. All examples of the row house typology have an entry door on the street for each dwelling. In terms of the apartment typology, the ground floor is either small scale retail or there are many entrances for dwellings and the entrance to car parking is either concealed or in a back lane (or the need for car parking is replaced with a shared car). Such exemplary projects give suggestions for rules to guide intensification in Melbourne.

In conclusion, while intensification is a broad term referring to any increase in the intensity of built form or activity it is important to be more precise about the quantity, distribution and typology of intensification. It is suggested that can promote walking, cycling and public transport instead of car dependence, that it saves greenfield land from development, that goods and services are more equitably distributed and that there is increased social interaction on the streets. However these benefits are more likely to be felt if the intensification occurs in clusters or precincts close to public transport. Housing typology also plays a role, with high-density, low to mid-rise row houses and apartments increasing social interaction on the street. While there is no widely agreed figure for an appropriate population density, Australian cities are currently of a low density and there is scope for considered intensification. Intensification is not just about meeting infill targets but has the potential to provide a range of benefits to the existing suburbs of Melbourne.
Melbourne

Intensification
Number of dwelling units commenced in Victoria. Source ABS 8752.0 - Building Activity, Australia.

- **Row and townhouses, flats and apartments**: Yellow line
- **Detached houses**: Gray line

**Strategic plans**
- Metropolitan Strategy
- Shaping Melbourne's Future
- Living Suburbs
- Melbourne 2030

**Statutory codes**
- "Flat codes"
- Good Design Guide
- ResCode

**Victorian state governments**
- Cain - Kirner government: Labor
- Kennett government: Liberal
- Bracks - Brumby government: Labor
- Baillieu - Napthine: Liberal

Plan Melbourne
New residential zones
The intensification of the existing suburbs of Melbourne is an incremental process that has been occurring predominantly since the 1960s. This chapter will outline where intensification is occurring, and of what kind; and analyse both of exemplary and poor forms of intensification in Melbourne. It will then look at the driving forces behind intensification—the conditions and causes. It will then elaborate on urban intensification policy and several metropolitan strategies that have attempted to guide the location and quality of this intensification. It will conclude with a short summary of the research that has focused on intensification in Melbourne.

4.1 Where does intensification occur?

The density of the built form of inner Melbourne is increasing. While the majority of new dwellings are still constructed in ‘growth areas’ on the periphery of the city, there has been a growing number of semi-detached row or terrace houses, and flats and apartments built in existing suburbs. Although planning policy has attempted to concentrate intensification in ‘activity centres’ close to public transport, it can be seen in this map of new development from 2001 to 2011 that intensification has occurred in a very dispersed manner, with no concentration in activity centres or close to public transport. The location of new development appears to be based on other factors such as the characteristics of particular plots to be redeveloped. For example, developers take advantage of corner plots or plots with rear access to allow access for multiple dwellings.

4.2 Typologies of intensification

It is possible to categorise the intensification of the built form in Melbourne into three typologies based on their location, each with their own processes and characteristics: suburban infill, transit corridor and activity centre redevelopment and brownfield redevelopment. Suburban infill typically occurs incrementally, through dispersed redevelopment of one plot or two adjacent plots. Managed by a small developer, two to seven dwellings replace detached houses (Phan et al., 2008). Secondly, it occurs along tram corridors, next to train stations, in locations designated as ‘activity centres’. Here ten to 50 dwellings replace low-rise retail and warehouse structures, with development also largely market-led and incremental but
Figure 6. Brownfield infill development, Melbourne, 2004–2010

Figure 7. Greenfield development, Melbourne, 2004–2010

Figure 8. Greyfield infill development, Melbourne, 2004–2010

- **Greenfield**
  - 88,878 new dwellings
  - 53%

- **Greyfield**
  - 42,790 new dwellings
  - 26%

- **Brownfield**
  - 35,354 new dwellings
  - 21%
encouraged by planning policy and structure plans (Buxton & Tieman, 2004). Thirdly, large brownfield sites close to the centre of the city are developed, becoming large-scale urban renewals sites. This strategy can be seen in the Docklands redevelopment of the 1990s (Dovey & Sandercock, 2002) and the Fishermans Bend project, announced in 2012 and the intended location for 25 000 jobs and 50 000 residents (Minister of Planning, 2012). This thesis focuses primarily on the means of intensification that relate to the redevelopment of the suburbs: suburban infill and transit-orientated development. An analysis of examples these two typologies can be seen on the following pages.

4.3 Conditions and driving forces

The intensification of the existing suburbs of Melbourne is the result of many interrelated and overlapping factors; some providing the conditions for intensification while others actively causing it. These factors can be broken into four broad categories: existing built form, community factors, the planning system and the development industry.

4.3.1 Existing built form

In some ways the existing low-density form of Melbourne’s middle suburbs could be seen as well suited to intensification. The housing stock is ageing, largely built in the post war period, and the energy, communication and water networks are in need of regeneration (Newton et al., 2011). These suburbs are also served by extensive tram and bus networks and have established health and education services. On the other hand these suburbs are usually occupied and privately owned, making it difficult to assemble land for more intensive development. Much of the greyfields also have some historical value, making redevelopment more complicated. Developers also face higher construction costs for mid-rise dwellings on a greyfield site than on detached houses on a greenfield site.

4.3.2 Preferences and community resistance

There are several conditions relating to the community that encourage or discourage intensification. Firstly, demographic changes that lead to a decrease in the average household size and population growth may create an increased demand for housing, in turn possibly encouraging intensification at the city scale. Secondly, there is the community perception and acceptance of denser development. A preference for mid and high-rise housing may encourage intensification. On the other hand, community resistance to development in the form of NIMBYism may slow intensification.

For almost all of Melbourne’s short history a detached house has been the preferred and most frequently constructed housing typology. Multi-family housing
Examples of suburban infill

- not large increase in number of dwellings
- maintains suburban streetscape
- most of site is paved

- poor quality facade
- cars parked in front of building
- no storage
- most of site paved, no private open space

- each dwelling appears the same (but good that each dwelling is articulated)
- medium density but individual access
- single garage
- private open space and front and rear
Examples of transit orientated development

- Facade not in line with street (does not create 'street wall')
- One entrance for many apartments
- Retail vacant (too large)
- Car park entrance disrupts street
- Too tall for suburban context
- Balconies appear unrelenting
- Supermarket on ground floor
- Car park entrance disrupts street
- Consistant but detailed facade
- Cafe on ground floor
- Shared flexi car and bike racks
- Shared roof garden
was associated with those on the social and economic margins, and high-rise apartments were particularly stigmatised since they were associated with the public housing constructed as a result of slum clearance in the 1960s (Costello, 2005). The inner suburbs of Melbourne, those within 10 kilometres of the city centre, experienced their first wave of gentrification in the 1970s: white-collar professionals were drawn to the terrace houses built during the property boom of the 1880s. A second wave of gentrification occurred in the early 1990s, resulting in warehouse conversions and new medium-density housing on brownfield sites. Vacant office buildings in the central business district began to be converted into apartments, beginning an association between high-rise living and an affluent lifestyle. Developers began to market new apartment towers primarily for two demographics: young professionals and couples in their forties and fifties downsizing after their children had moved out of home. An urban lifestyle had become desirable, with the affluent buying into a vibrant street culture and close proximity to cafes, restaurants and shops.

More recently, medium-density housing has become more widely desirable as homebuyers make trade offs between housing size, form and location. Increasingly, buyers are willing to choose a smaller, well-located dwelling over a detached house on the periphery of the city with the associated long commutes, higher transport costs and less access to services. This shift in public perception and the desirability of medium and high-density housing can be seen to support intensification.

Community resistance is the most commonly posited factor that slows urban intensification. Umbrella community groups such as Save our Suburbs and Planning Backlash co-ordinate actions and lobby the government to maintain the existing character of the suburbs and protect them from inappropriate development. Local government is also seen to support residents in these concerns.

### 4.3.3 Planning system

Urban intensification has been supported in planning policy since the late 1980s. However, intensification has not always occurred to the desired extent. For example the Melbourne 2030 metropolitan strategy introduced in 2002 aimed for 70% of new development to occur in the existing suburbs, primarily in selected ‘activity centres’ (Department of Infrastructure, 2002). However a review of new development from 2004 to 2010 found that only 47% occurred within the existing suburbs and was scattered evenly throughout the city instead of concentrated in the selected areas (Newton & Glackin, 2014). An audit carried out on this strategic plan suggested that there should be more clarity in who is responsible for implementing the plan and broad-based support for the strategy from all stakeholders involved, especially the local government and the community (Moodie et al., 2008). An addition factor may have been inadequate restrictions on greenfield development as currently the mode of development with the lowest up front costs (but high on-going costs) and without the complications involved in building in the existing city.
As many aspects of statutory planning are discretionary, this system can be slow, confusing and inconsistent, increasing costs for the developer. In the current system if either the developer or the residents are unhappy with the council’s decision on a planning approval application, it is sent to VCAT, a state tribunal.

4.3.4 Development industry

In order for the development industry to drive intensification, the level of reward needs to be higher than the level of risk. As it currently stands there are few exemplar projects for the redevelopment of greyfield sites and the construction industry is not yet competitive in this type of construction.

Woodcock et al. (2011) believe that this system thwarts intensification policy by encouraging speculation. In their case study of Brunswick, construction had only commenced on half of the sites with approved planning permits. Vacant lots were on-sold and the planning permits extended, with the seller making significant capital gains without construction. The complicated planning approval process can be seen to discourage intensification.

4.4 Intensification policy in Victoria

Urban consolidation policy has influenced land use planning in Australia since the late 1980s (Buxton & Tieman, 2004), evident in both strategic and statutory planning. The Kennett Victorian state government (Liberal Party of Australia, centre-right) aimed to facilitate market-led consolidation with the introduction of the metropolitan strategy Living Suburbs in 1995. While this strategy focuses primarily on Melbourne’s business environment and economic competitiveness, it also argued to increase the quantity of medium-density that given that half of Victoria’s households consist of only one or two people (Hamnett & Freestone, 2000). Such development was facilitated through the Good Design Guide for Medium Density Housing, also released in 1995. Buxton and Tieman (2004) describe these tools as “regulatory processes designed to deregulate, that is, they used new legislation and statutory processes to lessen restrictions over development”. Through these processes, medium density housing was built where the market dictated throughout the suburbs.

The new Labor state government (Australian Labor Party, centre-left) responded with a new strategic plan in 2002 entitled Melbourne 2030. Instead of medium-density development happening anywhere it would be encouraged in the ‘right places’, such as activity centres and close to public transport, instead throughout the residential zones (Buxton & Tieman, 2004). Responding to a perception that the Good Design Guide allowed for the destruction of neighbourhood character, a new statutory tool ResCode was introduced. It was intended that it would protect existing
residential areas and concentrate growth close to public transport, however Buxton and Tieman (2004) state that it “continues to apply uniform, often discretionary, standards to all residential zones” and it is a “powerful statutory tool favouring dispersed instead of concentrated medium density development”.

The next chapter relating to planning policy came with the introduction of a new Liberal state government in 2010. Planning laws that facilitated development close to transport were removed, with the aim of protecting existing suburban areas, and the focus moved instead to large-scale urban renewal of inner city brownfield sites (Dowling, 2010). This was reinforced with the new metropolitan strategy Plan Melbourne in 2013. A complete re-evaluation of residential zoning was also proposed. In a process that is due for competition in July, 2014, each municipality (or local government area as it is known in Australia) can choose to rezone its residential areas into one of three zones: Residential Growth Zone (encouraging dwellings of up to four stories), General Residential Zone (moderate growth) or Neighbourhood Residential Zone (growth restricted). Of the applications already received, most municipalities have been liberal in their application of the third, most restrictive zone, placing 70-90% of their residential areas in lockdown from development (Peterson, 2013). While the zoning has not yet been finalised, it appears that it may limits the amount of medium density housing that can be built in existing suburbs, directing new housing to large brownfield sites such as Fishermans Bend and to greenfield development. This could pose issues for housing diversity and affordability.

The new residential zones have the potential to create more clarity in residential development and to concentrate medium density in certain areas in order to protect the character of the existing suburbs. However there was no metropolitan wide coordination of the new zones, leaving each municipality to choose the application of each zone, potentially limiting the development of medium-density housing close to public transport.
4.5 Strategies to guide development

There have been a succession of metropolitan strategies released that attempt to deal with the issue of population growth in Melbourne.

4.5.1 Melbourne 2030

*Melbourne 2030* metropolitan strategy introduced in 2002 aimed for 70% of new development to occur in the existing suburbs, primarily in selected ‘activity centres’ (Department of Infrastructure, 2002). However a review of new development from 2004 to 2010 found that only 47% occurred within the existing suburbs and was scattered evenly throughout the city instead of concentrated in the selected areas (Newton & Glackin, 2014).

4.5.2 Plan Melbourne

A new metropolitan strategy was released in 2014, which attempts to deal with community resistance to intensification by concentrating most new development either in high-rise urban renewal sites close to the centre of Melbourne or in suburban developments on the periphery. This strategy is currently being implemented by a complete reworking of residential zones. Under the new zoning system most of the existing suburbs are protected from intensification.
4.5.2 Transforming Australian Cities

Led by City of Melbourne’s Director of City Design Rob Adams, this strategy aims to make better use of Melbourne’s existing infrastructure, especially the public transport infrastructure, and propose a plan that is pragmatic and politically palatable (Adams, 2009).

While Melbourne 2030 focused on creating dense development in activity centres, Transforming Australian Cities additionally focuses on development along existing tram and bus lines, creating ‘urban corridors’. This report calculates that it is possible to accommodate an extra 1.4 million people within the existing metropolitan boundaries. Mid-rise development of four to eight stories would occur only in these ‘urban corridors’ or existing activity centres. No further development would be permitted on the fringes of the city and existing suburbs would be protected from higher density development.

Transforming Australian Cities also proposes the development of urban design guidelines to guide the quality of new developments. This is an important consideration because currently there is little influence over the spatial, material and architectural quality of new developments. This may contribute to the community’s resistance to all new development, as many new buildings are generally do not make a positive contribution to the townscape.

**Metropolitan strategies**

<table>
<thead>
<tr>
<th>Melbourne 2030 2002-2010</th>
<th>Plan Melbourne 2013-</th>
<th>Transforming Australian Cities 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenfield</td>
<td>Suburban infill</td>
<td>Transit-orientated development</td>
</tr>
<tr>
<td>Greyfield</td>
<td></td>
<td>Brownfield</td>
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</tbody>
</table>

Right: Transforming Australian Cities (2010)

Bottom left: A comparison of the three different strategies for intensifying Melbourne
Planning Backlash

Aerial view of Melbourne showing urban corridor and major activity centre. Source: City of Melbourne

Maribynong Road, existing view (top) and visualisation of proposed strategy (bottom). Source: City of Melbourne
### Factors that currently encourage intensification

- Reward > risk

### Factors that currently discourage intensification

- Risk > reward
- Lack of exemplar projects
- Lack of established medium density construction industry

### Proposals to encourage intensification

- Encourage innovative construction practices.
- New finance models.
- Exemplar projects.

### Developers

- Activity centre development overlays.
- Moreland high density guidelines.

### Planning

- Delays and uncertainty
- Zoning - height restrictions
- Promoting greenfield and brownfield development

### Community

- Population growth
- Demographic change
- Preference for apartments

### Existing Stock

- NIMBYism
- Preference for detached house

### Community Planning Developers

- Reward > risk

### Existing Stock

- Existing low density
- Ageing building stock

### Greyfield

- Privately owned and occupied
- Problems with land assembly
- Heritage buildings

### Exemplar projects

- Spatial information platforms to reveal areas with development potential.
- Incentives for land assembly.

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### Research

**Greyfield**

- **Greenfield**
- **Suburban infill**
- **Transit-orientated development**
- **Brownfield**

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**Macro-Urban Form, Transport Energy Use and Greenhouse Gas Emissions: An Investigation for Melbourne**

Department of Transport (2009)

**Habitat 21**

Monash University (2011)

**Infill Opportunities**

Monash University (2011)

**Intensifying Places**

Monash University & University of Melbourne (2014)

**Towards a new development model for housing regeneration in greyfield residential precincts**

AHURI (2011)

**Understanding Infill**

Swinbourne University (2014)
4.6 Relevant research

In the past the intensification of greyfield areas has not been the subject of much research. To counter this there has been several reports released in the last few years that start to look at how we can encourage this phenomenon. The report *Understanding Infill: Towards New Policy and Practice for Urban Regeneration in the Established Suburbs of Australia’s Cities* (2014) lists several suggestions to positively engage with the driving forces behind intensification. Suggestions include encouraging innovative construction practices and creating exemplar projects, developing new urban policy to reduce risk and uncertainty for developers, implementing proactive community engagement so that residents are involved with the process of intensification, providing incentives for land assembly and finally the creation of a spatial information platform that would aid planners, developers and residents in revealing which areas of the city have the best potential for strategic redevelopment.

Intensification in Melbourne is influenced by many factors. The existing built form provides the conditions but intensification is primarily driven by the interaction between developers and the planning system, with some influence from community groups. Recent strategic plans have not achieved their aims of directing intensification, so it is important to think about the current framework and how it can be adapted to encourage intensification.

“As long as a suitable supply of brownfield land exists and outer greenfield land supply remains unlimited, the greyfield areas will struggle to attract major property developers in anything other than a piecemeal fashion. New planning and policy frameworks and infrastructures will need to be established to reduce the risk and uncertainty associated with larger-scale redevelopment in the middle suburbs” (Newton et al., 2011, p. 6).

The following chapter will analyse the role the statutory system plays in guiding intensification, which may offer some suggestions on how to deal with this interaction between developers and the planning system.
Statutory planning plays an important role in encouraging or limiting the intensification of the existing suburbs of Melbourne. This chapter will look at the existing system of zones, overlays and planning provisions and the effect it has had on guiding intensification in Melbourne. Given that the system of residential zoning is currently being restructured, this chapter will also analyse the potential impact of proposed residential zoning changes. Finally, it will reflect on alternatives and modifications to the existing system that could have an impact on the location and quality of housing in Melbourne.

This chapter will attempt to analyse the effect of the current and new residential zones by considering a ten by five kilometre area encompassing Brunswick, Coburg, Thornbury and Preston, which includes part of the local government areas of Moreland, Darebin and Banyule. By analysing the benefits and disadvantages of the proposed zoning changes I plan to reach some conclusions that will influence the formation of an alternative zoning system that encourages well located and appropriate intensification of the existing suburbs.

5.1 Statutory planning in Victoria

Each state in Australia has its own regulation-based statutory planning system, relying on tools such as zoning and planning standards. This emphasis on regulation derives from the British planning system, but since the 1980s each system has added complementary planning approaches influenced by more recent systems of financial and planning incentives from the USA (Williams, 2012). Of all the Australian systems the Victorian one is considered the most inflexible and centralised when it comes to statutory planning instruments: “the structure and content of planning schemes are highly prescriptive and standardised with little room for the exercise of local variation” (Williams, 2012, p106).

It was in this context that a reform of residential zoning was introduced in July 2013. Described as “the single greatest change to the strategic and statutory planning system in Victoria in a generation” (Peterson et al., 2014), the widely used residential zone R1Z is to be replaced by three new zones: Residential Growth Zone (development of up to four stories), General Residential Zone (moderate growth)
and Neighbourhood Residential Zone (limited growth). Each local government area must apply these changes to residential zoning before July 2014. These new zones are promoted as bringing more clarity and certainty to the system as they specify maximum building heights at the outset instead of the current discretionary system where developers can seek planning approval for different heights dependant on the local conditions. However they have provoked concern and criticism from industry professionals as liberal application of the minimal development zones (NRZ and GRZ) effectively puts a stop to medium density development in the existing suburbs (Peterson et al., 2014).

5.2 Existing zones, overlays and planning provisions

Statutory planning in Melbourne uses land based zoning. By comparing an aerial photograph and the zoning plan of the ten by five kilometre study area, it is possible to see a clear relationship between the current land use and its zone. This area is predominantly zoned residential, with business zones designating strip shops along main roads. Parks are protected by green zones (PPRZ, PCRZ and UFZ) and industrial districts by industrial zones. However, it is not possible to see the full picture of what land use is allowed by referring to the zones alone. In order to bring more flexibility to the system, overlays are added to allow development that is in line with the structure plans for each municipality. For example, the new apartments pictured below on Plenty Road in Preston were not built in a residential zone, but a business zone. A structure plan had been created to encourage high density residential development in a former industrial area well serviced by tram. This was implemented with a design and development overlay that allows for new height restrictions, uses and other requirements. This system creates flexibility but also makes it very difficult for those not familiar with the planning system to understand what type of development is allowed where.
Additionally, planning provisions give more precise requirements for the type of development that is allowed in each zone. Rescode is a planning provision that has been used throughout Melbourne since its introduction in 2001. It guides the development of housing up to four stories and attempts to maintain ‘neighbourhood character’ and protect amenity by mandating setbacks, building envelopes and discouraging overshadowing and overlooking. However, most local government areas have no additional codes for housing over four stories. The City of Moreland released a Design Code for Higher Density Development in 2012 that attempts to fill this gap. By clearly stating guidelines for setbacks and massing it attempts to encourage higher quality intensification. These guidelines can be seen as exemplary for other local government areas.

5.3 Proposed residential zoning changes

In 2012 a state-wide review of residential and industrial zones occurred. While, in the state of Victoria zones are considered “the most powerful mechanism available to councils for controlling the type and location of land uses” (Shaw, 2014), this major planning review occurred before Plan Melbourne, a new metropolitan strategic plan for Melbourne was released for consultation. The table on the left compares the existing and proposed residential zones based on what type of housing is encouraged in each zone.

Each local government area was asked to submit a proposal to transform all Residential Zone 1 areas to either Residential Growth Zone (development of up to four stories), General Residential Zone (moderate growth) or Neighbourhood Residential Zone (limited growth) by July 2014. Although the adjoining local government areas of Moreland and Darebin have similar socio-economic characteristics, it can be seen in the map to the left that they have applied the zones differently, with Moreland placing large areas in the most restrictive zone compared to Darebin which has attempted to direct high density development along tram corridors by zoning those areas Mixed Use Zone or Residential Growth Zone.

However as mentioned in the previous section a zoning map does not show all the areas that are available for housing development. The existing design and development overlays will remain after the introduction of the new zones, continuing to allow for housing in business or industrial zones.
3.1.2 Narrow Lot Building desirable approach

3.2.2 Block apartment on a deep site mid-block

1.3.1 Street setback defines the scale and proportion of the street.

3.6.4 Car parking should be located in the basement or if located above-ground should be concealed from the public domain with other uses such as commercial or residential.
Role of zone
Enable all types of housing
Enable growth in housing and jobs
Enable growth in housing
Enable moderate housing growth while respecting neighbourhood
Restrict housing growth

Housing expected
Diverse housing
High and medium density housing
Medium density housing
Single dwellings and some medium density housing
Single dwellings (dual occupancy under some circumstances)

Do any codes apply?
Rescode up to 4 stories; design code for higher density development (only in Moreland)
Rescode up to 4 stories; design code for higher density development (only in Moreland)
Rescode up to 4 stories; design code for higher density development (only in Moreland)
Recode
Rescode

Maximum height
No
No
Yes, 13.5 metres
Yes, 9 metres
Yes, 8 metres

Can max height be exceeded?
Yes, with planning approval
Yes, with planning approval
Yes, with planning approval
Yes, with planning approval
No
5.4 Reception of new residential zones

The introduction of the new residential zones has been met with a mixed reception from industry professionals. It has been most positively received by local government as they are able to apply the zones in the way they feel suits the local area, and have generally supported the wide application of the minimal development zones. Local governments are often under pressure from community groups to protect the existing suburbs from further development. They are also able to direct higher density development closer to existing public transport and shops. For example, the municipality of Moreland has decided to apply the NRZ to all areas more than 800m from local shops (Gray, 2013).

On the other hand, many planning professionals are very critical of its introduction, especially the widespread application of the NRZ. Some are concerned for the lack of strategic consideration about the distribution of housing in Melbourne as a whole, evident in how the new zones were announced before Plan Melbourne, the metropolitan strategic plan, and that local government were free to implement the new zones freely without allowances or housing targets (Burgess, 2014). They fear that each local government area will implement these zones quite differently from each other, with affluent suburbs restricting new development and less affluent suburbs actively promoting development (Lucas, 2014). They also believe that it will dramatically slow the supply of medium density housing, directing it to the proposed large scale brownfield sites such as Fishermans Bend or to greenfield development on the periphery of the city. This is counter to one of the core objectives of Plan Melbourne to create a city “20-minute neighbourhoods” in which jobs, schools, shops and community services are a 20-minute walk, cycle or public transport ride from home (Shaw, 2014).

Walton (2014) suggests that in order for the concept of twenty minute neighbourhoods to be strengthened instead of weakened by striving for a middle ground between high density urban renewal areas and the protected low density suburbs, this could be achieved by considering a more purposeful role for the currently underused mixed use zone, applying it at a broader neighbourhood or precinct scale. This would allow for a range of residential, commercial and industrial uses and for housing at a higher density.
Left: Map showing existing zones and overlays that relate to housing

Right: Isometric drawing showing allowable heights for development (housing and mixed use) with the existing statutory system

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Left: Map showing proposed zones and overlays that relate to housing, to take effect from July, 2014

Right: Isometric drawing showing allowable heights for development (housing and mixed use) with the proposed statutory system, to take effect from July, 2014
5.5 Test site: Thornbury

In order to better understand the proposed changes and the affect they have on where housing can be built, I took a three by two kilometre area in Thornbury which can be seen on the previous pages. The isometric drawings show the permissible height allowed under the existing system and with the proposed changes, by overlaying the zones with the Design and Development Overlays that exist in the area. It is interesting to see that although only a small area was zoned Residential Growth Zone, there is still mid to high-rise residential development allowed under DDO3 (The Junction), DDO11 () and DDO16 (St Georges Road Corridor). The General Residential Zone seems to have been applied in areas that are walking distance from the tram and shopping areas, and the Neighbourhood Residential Zone to all other residential areas.
5.6 Reflections and possible alternatives

The existing statutory planning system of zones and overlays allows some flexibility but is a blunt tool and also clouds the potential areas of development for non-planners. The creation of an interactive map that revealed where housing is allowed to occur and key information about mandated heights, such as the isometric drawings I created, would aid planners, developers and the general community get a better overview of what the current and proposed systems allow. This could also allow for a more detailed, strategic and metropolitan wide analysis of what affect these new zones will have on the built form of Melbourne.

In my analysis I can see some benefits in the introduction of the new zones as they may concentrate higher density development close to public transport and shops. However they appear to be too restrictive, with only the sparsely applied Residential Growth Zone allowing housing over two stories. Also they still maintain the strict land use zoning division, only allowing for housing when a mixed use zone may more supportive of a city of “20-minute neighbourhoods”.

It is important to also consider that considerable mid-high density development will still be able to occur in designated areas due to the design and development overlays. It is important that the quality of this development is guided with architectural and urban design guidelines. The City of Moreland’s Design Code for Higher Density Development could be used as the base for the development of such guidelines.
This chapter aims to describe and analyse the spatial characteristics of Melbourne in order to support the strategic vision in the following chapter. It looks at the city in a series of layers: ecology, traffic and transport networks, retail, industrial, housing, population density and areas of advantage and disadvantage. It then takes a ten by five kilometre area to complete a suitability analysis, in order to highlight areas that are most suitable for intensification or protection.

**Left:** Nature reserve in recently constructed outer suburb (Epping)

**Left:** Milk bar in middle suburb (Brunswick)
6.1 Ecology

Melbourne is relatively flat, allowing the city to spread in comparison to geographically bound cities such as Sydney. It is structured by several rivers that run through the city forming (mostly) continuous parks alongside them. There are several large parks close to the central business district, set aside by the first lieutenant-governor of Victoria, Charles La Trobe. There are parks scattered throughout the suburbs, and the streets close to the centre have many trees.

The private backyards of the existing suburbs also provide an ecological resource, with the potential to be further utilised for vegetation, water collection, solar energy collection and productive gardens (Adams, 2010).

Melbourne has suffered from drought and water scarcity, leading to the construction of a desalination plant to produce drinking water in 2012. As a consequence of water restrictions many households collect their own water in water tanks and use grey water systems to water their gardens.
6.2 Traffic and transport networks

The car has been central to Melbourne's development and continues to dominate how people travel in the city. There has been considerable and continuing investment in the city's road network. Melbourne has the longest road length per capita and its network of freeways is comparable to freeway networks in cities such as Los Angeles and Atlanta. Melbourne's public transport system on the other hand, has not developed much since the early 20th century. This is reflected in the use of these systems, with the private motor vehicle accounting for 89% of all trips measured in passenger kilometres, compared to around 11% for public transport.

There is a clear distinction between the inner and outer suburbs in regards to accessibility by public transport. The city centre and inner suburbs are well serviced by a public transport network developed in the late 19th century and early 20th century, namely a rail and tram networks. While Melbourne has the largest tram network in the world it is also has the slowest trams in the developed world. The outer suburbs are serviced by infrequent rail and bus services, and by the ‘smart bus’ a express bus introduced in the 2000s that operates as a support for the rail network.

The public transport system in Melbourne is now receiving considerable attention from citizens and politicians, as there is an awareness that the current system is insufficient.
6.3 Industrial and commercial

It is possible to see two patterns of retail development in Melbourne which reflects the period when they came into existence. In the inner and middle suburbs retail strips follow main roads, especially those with trams. These concentrations of shops and cafes create neighbourhood meeting places in these suburbs. In the outer suburbs however commercial areas are large shopping centres, often located close to major roads.

There are several large industrial districts located close to freeways.

Far left: 10x30km map showing shopping strips along tramlines and industrial districts

Top left: light industry in Thornbury

Bottom left: shopping strip in Northcote

Right: 60x60km map showing distribution of retail throughout the city
6.4 Housing typologies

Although the detached house is the most common form of housing in Melbourne, there is more variation in typology, such as townhouses and apartments closer to the centre of the city.

**Above:** Townhouse typology

**Far left:** 10x30km map showing housing typologies

**Left:** detached houses, low rise apartments and mid rise apartments
Thomastown
23 people per hectare (2011)

Thornbury
32 people per hectare (2011)

Fitzroy
45 people per hectare (2011)
6.5 Density

Melbourne has the highest population density at its centre, decreasing as it reaches the periphery. We can see this tendency by measuring the population densities in three sites: Fitzroy (45 people per hectare), Thornbury (32 people per hectare) and Thomastown (23 people per hectare). The higher densities closer to the city come from the more densely built historical fabric from the late nineteenth century such as terrace houses, and from incremental intensification that has happened since then.

Far left: 10x30km map showing population density

Left: Images of Fitzroy, Thornbury and Thomastown

Right: 60x60km map showing population density
Planning Backlash

1928 1.1 million
1951 1.5 million
1971 2.6 million
1996 3.5 million
2002 3.7 million

Camberwell

Melbourne VAMPIRE Index 2008
Source: Griffith University

The physical extent of Melbourne from 1928 until 2002.
Source: Diagram by author based on information from Department of Infrastructure
6.6 Advantage and disadvantage

These maps show the SEIFA Advantage Disadvantage Index which measures the relative socio-economic advantage and disadvantage of different statistical districts. A high score (yellow) indicates high income and level of education while a low score (dark grey) indicates low income and low levels of education.

At the scale of the city the patterns of advantage in the south-eastern suburbs reflect that they were historically more desirable compared to the disadvantaged north-western suburbs, which have historically been connected to port activities, industry and working class housing.

At the scale of the ten by 30 kilometre strip it is possible to see another trend: areas of advantage are concentrated at the centre of the city, becoming more disadvantaged towards the periphery. This can been as problematic as the advantaged areas in the centre are well connected to services and public transport while the areas towards the fringe are car dependent and poorly serviced. This issue is highlighted by VAMPIRE or ‘vulnerability assessment for mortgage, petroleum, and inflation risks and expenditure’ index. Areas shown in red are vulnerable to mortgage and oil price indexes as they are very car dependent.

Far left: 10x30km map showing SEIFA advantage disadvantage index
Top left: VAMPIRE index
Bottom left: images of social housing
Right: 60x60km map showing SEIFA advantage disadvantage index
6.7 Analysis site: 10x5 kilometre

This ten by five kilometre site cuts through the middle suburbs in the north of Melbourne and contains many of their typical elements. This area is well served by tramlines, with retail strips running along these streets. The Merri and Darebin Creeks cut through the suburbs, acting as ecological corridors and hosting cycle paths that connect to the CBD.

The map below shows the dwelling density of each residential plot. Plots that are light blue or dark blue have a low dwelling density, suggesting that they consist of only one detached house on a medium to large plot. Such districts could be preserved for this characteristic.
Thornbury
Bell
Preston
Croxton
Northcote
Anstey
Moreland
Coburg
Batman
River
Train line and station
Tram line and stops
Bus route and stops
Potential for high density
Potential for medium density
Public green space
Low density residential block
400m buffer from river
District with low density
400m buffer from park
District with low density
400m buffer from park
6.8 Suitability analysis

A suitability analysis of this area was completed to highlight areas that are more suitable for intensification and those that are more suitable for protection. The top map shows areas that have potential for high density development and mid density development, influenced primarily by proximity to tram lines and train stations, but also proximity to shops and services. The bottom map shows areas that should be protected from development and have potential for green spaces. This map focuses primarily on the existing green spaces and connecting them together to form an ecological corridor. It also highlights areas with a heritage overlay and precincts of existing very low density that could be protected from development.

6.9 Design criteria

The following page shows conclusions from this analysis which can be used to influence the vision in the following chapter.
### TRANSPORT

#### Analysis conclusions
- **1** Extensive tram and bus services in inner and middle suburbs
- **2** Tram very slow, stops every 100-200m
- **3** Lack of intermodality train, bus, tram

#### Design principles
- **1** Concentrate new development in inner and middle suburbs
- **2** Improve tram service: speed/frequency
- **3** Improve intermodality

#### Strategic rules
- **1** Introduce new residential zones with greater density close to public transport
- **2** Introduce new express tram with priority and stops every 500m
- **3** Connect bus lines with express tram stops

### HOUSING

#### Analysis conclusions
- **4** New housing is dispersed across the existing suburbs, not in ‘activity centres’
- **5** New housing (and existing stock) does not match diverse typologies required
- **6** Most new high density housing is poor quality and does not contribute to public realm
- **7** Most redevelopment in suburbs 1:1 or 1:2 replacement rate

#### Design principles
- **4** Concentrate development within walking distance from PT and services
- **5** Encourage housing diversity (high-density low-rise, apartments)
- **6** Review standards for access to light, setbacks, mediation of intensification
- **7** More dwellings should replace existing resulting in higher density

#### Strategic rules
- **4** Introduce new residential zones with greater density close to public transport
- **5** Introduce new residential zones that promote these typologies
- **6** Set design rules for each new residential zone
- **7** Set design rules for each new residential zone - 1:6, 1:20 etc.
## Services

<table>
<thead>
<tr>
<th>Analysis conclusions</th>
<th>Design principles</th>
<th>Strategic rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail strips along tram lines in middle suburbs - post offices often at intersection</td>
<td>Concentrate new development close to retail</td>
<td>Greater density close to retail + add retail to mixed use development</td>
</tr>
<tr>
<td>Schools evenly distributed through suburbs</td>
<td>Ensure school close by</td>
<td>New school per x people</td>
</tr>
<tr>
<td>Jobs concentrated in CBD (especially white collar jobs)</td>
<td>Include offices and studios in mixed use development</td>
<td>x offices per new dwellings</td>
</tr>
</tbody>
</table>

## Green

<table>
<thead>
<tr>
<th>Analysis conclusions</th>
<th>Design principles</th>
<th>Strategic rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most dwellings have access to private green space</td>
<td>New housing should have access to private or communal green space</td>
<td>Set design rules to encourage private or communal green space with new dwellings</td>
</tr>
<tr>
<td>Extensive green corridor next to rivers - but corridors not connected</td>
<td>When possible enlarge corridors and link green spaces</td>
<td>Density increases = more m² green space</td>
</tr>
<tr>
<td>Public green spaces throughout suburbs - but not connected</td>
<td>As density increases, create more public green spaces and squares</td>
<td>New green space with x increase in density of people</td>
</tr>
</tbody>
</table>
Implementation & Strategies
CITY SCALE

strategic zones +

general rules +

NEIGHBOURHOOD PRECINCT SCALE

neighbourhood plan +

design coding

state government → local government → neighbourhood groups
7.1 City scale and neighbourhood scale

This chapter contains a strategy to guide the intensification and regeneration of the greyfields of Melbourne, while reinforcing the concepts of a 20-minute city, a spontaneous city and a greener city. The strategy operates at two scales: the city scale and the neighbourhood scale. At the scale of the city, a new zoning system is introduced, with general rules to guide what can occur in each zone. However, development can only occur within these zones if neighbourhood development groups are formed. A neighbourhood precinct is formed based on characteristics of the built form or a pre-existing community. Land owners and local residents work together to create a neighbourhood plan and design code.
Thornbury Bell Preston Croxton Northcote Anstey Moreland Coburg Batman River

Existing public green space
Existing industrial area
Train line and station
Tram line and stops
Bus route and stops

Mixed use urban corridor zone
Mid-rise housing zone
Low density protection zone
Future mixed use zone
Heritage overlay

Green corridor zone
Walking distance to high density zone
River buffer 400m
7.2 City scale: new strategic zones & rules

The top left map shows new strategic zones that allow where mixed use development and high density low rise development should occur, and which areas that should be protected from development. The bottom left map shows new strategic zones for the development of green spaces. The map below shows both maps combined.

The table on the follow page sets out the rules of what kind of development is possible and encouraged in each zone.
<table>
<thead>
<tr>
<th>Zone Type</th>
<th>Role of zone</th>
<th>Neighbourhood plan + design codes required</th>
<th>Maximum height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed use urban corridor zone</td>
<td>To encourage high density housing and retail along tram and bus routes</td>
<td>Yes. Also subject to Moreland Higher Density Design Code</td>
<td><img src="image" alt="Graph" /> (Adapted from Transforming Australian Cities, 2010)</td>
</tr>
<tr>
<td>Mid-rise housing zone</td>
<td>To encourage mid-rise housing regeneration precincts within walking distance from public transport</td>
<td>Yes. Not subject to Rescode</td>
<td>11 metres or as specified in neighbourhood plan</td>
</tr>
<tr>
<td>Low density protection zone</td>
<td>To protect existing suburban areas from development, allowing only for detached houses</td>
<td>No. Subject to Rescode</td>
<td>8 metres</td>
</tr>
<tr>
<td>Green corridor zone</td>
<td>Strengthen ecological structure by enlarging green corridors along rivers and by connecting up the park system</td>
<td>No</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Neighbourhood plan + design codes required</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Uses other than housing

Active frontages: retail on ground floor. Offices also permitted.

(Adapted from Transforming Australian Cities, 2010)

Parking & entrances

1:1 car park to dwelling (can be reduced if there is a flexicar available)

(Adapted from Transforming Australian Cities, 2010)

Daylight access

Every habitable room must have direct access to sunlight. No borrowed light.

(Adapted from Moreland Higher Density Design Code, 2012)

Land assembly

Permitted, but fine grain of plots must be retained

Role of zone

Maximum height

To encourage mid-rise housing regeneration precincts within walking distance from public transport

Neighbourhood plan + design codes required

(Adapted from Transforming Australian Cities, 2010)

Low density protection zone

No. Subject to Rescode

8 metres

To protect existing suburban areas from development, allowing only for detached houses

Neighbourhood plan + design codes required

(Adapted from Transforming Australian Cities, 2010)

(Adapted from Moreland Higher Density Design Code, 2012)

Uses other than housing

Daylight access

Every habitable room must have direct access to sunlight. New development must not overshadow adjacent properties

(Adapted from Transforming Australian Cities, 2010)

Active frontages:

retail on ground floor. Offices also permitted.

(Adapted from Transforming Australian Cities, 2010)

Parking & entrances

1:1 car park to dwelling (can be reduced if there is a flexicar available)

(Adapted from Transforming Australian Cities, 2010)

Daylight access

Every habitable room must have direct access to sunlight. No borrowed light.

(Adapted from Moreland Higher Density Design Code, 2012)

Land assembly

Permitted, but fine grain of plots must be retained

Role of zone

Maximum height

To encourage mid-rise housing regeneration precincts within walking distance from public transport

Neighbourhood plan + design codes required

(Adapted from Transforming Australian Cities, 2010)

Low density protection zone

No. Subject to Rescode

8 metres

To protect existing suburban areas from development, allowing only for detached houses

Neighbourhood plan + design codes required

(Adapted from Transforming Australian Cities, 2010)

(Adapted from Moreland Higher Density Design Code, 2012)

Uses other than housing

Daylight access

Every habitable room must have direct access to sunlight. New development must not overshadow adjacent properties

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Active frontages:

retail on ground floor. Offices also permitted.

(Adapted from Transforming Australian Cities, 2010)

Parking & entrances

1:1 car park to dwelling (can be reduced if there is a flexicar available)

(Adapted from Transforming Australian Cities, 2010)

Daylight access

Every habitable room must have direct access to sunlight. No borrowed light.

(Adapted from Moreland Higher Density Design Code, 2012)

Land assembly

Permitted, but fine grain of plots must be retained

Role of zone

Maximum height

To encourage mid-rise housing regeneration precincts within walking distance from public transport

Neighbourhood plan + design codes required

(Adapted from Transforming Australian Cities, 2010)

Low density protection zone

No. Subject to Rescode

8 metres

To protect existing suburban areas from development, allowing only for detached houses

Neighbourhood plan + design codes required

(Adapted from Transforming Australian Cities, 2010)

(Adapted from Moreland Higher Density Design Code, 2012)

Uses other than housing

Daylight access

Every habitable room must have direct access to sunlight. New development must not overshadow adjacent properties

(Adapted from Transforming Australian Cities, 2010)
Possible precinct forming criteria

1. Notable characteristic of built form or landscape
2. An existing community / relationship
3. At major intersection
4. Ageing, low quality existing building stock
7.3 Neighbourhood scale: precinct formation and neighbourhood planning

Within the framework of this strategy, development can only occur if neighbourhood precincts are formed. Such precincts are suggested by local land owners or local government planners based on existing characteristics or future potentials. An example could be an existing retail area at a major intersection that has the potential for high density development. Another would be a district with ageing, low quality built form that is in need of redevelopment. Once the precinct has been formed, land owners, local community members and local government planners work together to create a unique vision of what this area could be. This is then formalised with a neighbourhood plan for the area, and design code to specify certain rules such as set backs and allowable materials.

By allowing development to occur only in these select precincts, coherent intensification that suits that particular area instead of ad hoc dispersed intensification. Developing in a precinct concentrates attention to that area, encouraging an upgrade of the public realm, creates a sense of place and allows the possibility for neighbourhood upgrades of water, waste and energy networks.

The following page shows examples of neighbourhood precincts that could be formed in the suburb of Thornbury. Two have been selected - Thornbury Village and Howard Arkley Quarter - as examples of the process and type of development that could occur.
Left: Aerial photograph showing three by two kilometre area encompassing the suburb of Thornbury

Right: Examples of neighbourhood precincts that could be formed
7.4 Site A: Thornbury Village

Thornbury Village is an existing neighbourhood centre. Located at a major intersection and serviced both by bus and tram lines it is well suited to increased intensification. It is currently a neighbourhood shopping strip with local shops and services such as a fresh food market, a pharmacy, post office, newsagency, but also more industrial uses such as a smash repairs workshop.

Any redevelopment should take care to retain the small grain of the narrow shops that give vitality to the street and the variety of local businesses that serve the area. By involving the local landowners in the development process these valuable community assets are more likely to stay.

The redevelopment of this area follows a series of rules that allow for incremental development with a cohesive result. Firstly, this site is entirely in the ‘mixed use urban corridor’ zone, so any development follows the rules that guide those zones. Then a neighbourhood vision is created. In this case there is an aim to create a 12 metre ‘street wall’ to match the average height of the existing facades. All new development must match the existing typology of narrow shops with awnings at the ground level.

Left: Newsagency on the corner of Normanby Road and High Street, Thornbury
Top left: Isometric drawing showing existing programmes

Bottom left: Isometric drawing showing buildings with heritage overlay

Right: Images of Thornbury Village

The sign reads: Sorry we are closed early because some_reason.
Vision

1. Narrow plot width, building variation

2. Meanwhile uses for blank facades

Material palette

No set material palette, but each building must use a limited material palette and be different to its neighbour.
Building envelope

Design rules

- Maintain narrow plot width 6-8 m
- Street wall 12m
- Shop awnings 4m
Left: Mid-development

Right: Final development

Right: Images of Thornbury Village
Right: Existing view
looking towards
Normanby Road
**Left:** Proposed view, first stage

**Right:** Proposed view, final stage (building envelopes)
7.5 Site B: Howard Arkley Quarter

Howard Arkley Quarter is a suburban area of detached houses, all built in a similar style in the post-war period. This precinct is chosen because of the ageing housing stock and its proximity to the tram on St Georges Road. The post-war houses give it a distinctive character which could be strengthened with the formation of a precinct.

The name of this precinct comes from the Melbourne artist Howard Arkley. He is best known for his technicoloured airbrushed depictions of Melbourne suburbia. The house depicted in his painting *A Splendid Superior Home* (1989) is very similar to the houses in this district and this connection could create an identity for this area.

The neighbourhood vision for this area inverts the suburban block by creating a shared green space in the rear of the backyards. A strict grid is introduced to allow for clusters of row houses to replace one or two adjacent detached houses. These townhouses have car access at the rear, and pedestrian access facing either the road or the green communal space. They must follow a strict rhythm of six metres wide frontages - a dwelling can be twice a wide, but must be articulated every six metres. A material palette of light brick and timber, with accents in pink, yellow or orange pay homage to the existing detached houses and to the painter Howard Arkley.

These rigid rules create a coherence to the development but allow flexibility within that framework. Each cluster would typically be designed by one architect, but some clusters could be designed by many designers operating within this framework.

*Left:* Typical post-war house, Bradley Avenue, Thornbury
Left: A Splendid Superior Home, Howard Arkley, 1989

Below: Isometric of the existing site - Howard Arkley Quarter

Left: Typical post-war house, Woolton Avenue, Thornbury
Vision

1. Shared backyards
2. Public / private transition
3. Private open space

Material palette

1. Light brown brick
2. Accents of orange, yellow or pink
3. Slatted timber / timber cladding
Left: Stage one development
Right: Stage two development
Images of Thornbury Village
Left: Existing view
looking towards
Normanby Road

Right: Proposed view,
first stage
Conclusion

This thesis began with the aim to examine the challenges and opportunities that arise from the regeneration of greyfield areas. It also aimed to analyse both the existing statutory planning system in Victoria and the anticipated changes to the system. Finally it aimed to suggest an alternative adaptation of the current planning system that would strengthen Melbourne’s position as a 20-minute city, a spontaneous city and a greener city through the intensification of the existing suburbs.

This chapter will give a brief outline of the outcomes of this process, comparing the resulting project with the problem field and aims stated at the beginning of this thesis. It will then compare this project with three other planning frameworks: the existing statutory planning system, the recently proposed changes, and the alternative framework suggested in Transforming Australian Cities (2010). It will then reflect on potential issues arising out of the proposed framework and opportunities for further research. It will conclude by considering to potential wider implications of this research.

8.1 Outcomes

This thesis contains both a research project and a strategic vision. The research project focused on the subject of intensification, especially in relation to greyfield regeneration, and on how the current and proposed planning frameworks guide this process. The strategic vision consists of two layers that work together to guide intensification: strategic zones and general rules at the city scale and neighbourhood plans and design coding at the neighbourhood scale.

8.1.1 Intensification and greyfield regeneration

Through my research into intensification and greyfield regeneration in particular, I concluded that intensification should contribute more than just an increase in density. The location and typology of intensification matters if it is to achieve the sustainable benefits associated with intensification. Intensification should occur in precincts, close to existing public transport networks and services.
1. Existing residential zoning system

2. Proposed changes (valid from July, 2014)
8.1.2 Current and proposed planning frameworks

My analysis of the proposed residential zoning changes found that while there is significant concern from the wider planning community that the new zones are 'locking up the suburbs', it became clear that the residential zones do not present the whole picture about where residential development is allowed. Design and development overlays provide a way for planners to allow development in commercial and industrial zones. In the small case study of Thornbury in the City of Darebin, there was considerable availability of land for high density residential development close to public transport. However, this local government area is not indicative of the rest of the city.

I concluded that this system of three zones that allow different types of residential development could be adapted to suit the aims of this thesis and incorporated in the strategy. I also concluded that both the current and proposed systems could benefit from more clarity about what type of development is permitted where. An online map that gave updated information about the heights and uses permitted could be useful.

8.1.3 Strategic vision

At the city scale three strategic zones are introduced: the mixed use urban corridor zone, the mid-rise housing zone, and the green corridor zone. Urban rules and general policies guide what is encouraged within each zone. These zones demonstrate the broad potential of different areas for intensification or additional green space, but development cannot occur without the formation of neighbourhood precincts. Once a precinct is formed based on the characteristics of a particular area, landowners, local residents and government planners work together to create a neighbourhood plan and a design code based on their vision for that particular area.

This strategy helps create a 20-minute city by concentrating high-density development close to existing public transport networks. It does this through three zones: mixed-use urban corridor, mid-rise housing and minimal growth. In some ways this is similar to what has been suggested by the new residential zoning system.

This strategy encourages a spontaneous city by setting up a new planning framework that allows for certainty and coherence but also flexibility and freedom. This system also involves the local land owners and residents in the development process which is the key component of the spontaneous city. We can expect a different type of development once current landowners are involved in the process.

It also contributes to a greener city by concentrating intensification in clusters close to existing transport. It also aims to provide more variety in the type of green spaces accessible by introducing shared green spaces to new developments. However how green spaces are enhanced at the city scale was not explored in this strategy.
3. Transforming Australian Cities

4. Suburban potential
8.2 Comparing planning frameworks

It is interesting to compare the planning framework I propose to three other frameworks: the existing zoning system, the proposed changes and an alternative strategy explored in Transforming Australian Cities. My proposed strategy incorporates parts of both the new zones and the Transforming Australian Cities approach. However it introduces a new element: the requirement for neighbourhood precincts. This addition helps concentrate development which has many benefits.

8.3 Reflections and further research

There were several topics that were related to this topic but beyond the scope of this thesis and could be explore in further research. Firstly, this thesis as with all recent metropolitan strategies for Melbourne takes continued population growth as a given. It could be possible to explore the alternative possibilities and probabilities. Also housing affordability is a major issue currently affecting cities but was beyond the scope of this thesis. Finally, this thesis focuses heavily on Thornbury and its immediate context and can not said to be applicable for the rest of the city. It would be interesting to investigate both the new zoning system and my suggested alternative in other locations in the city.

8.4 Wider implications

This project is sited in Melbourne, but could hold potential for other Australian cities. More broadly speaking, planning systems around the world are attempting to find a balance between rigid and flexible systems, and this single example of providing a broad framework for community stakeholders to could be inspirational for other locations.
References


Owens S, 1986 Energy, Planning and Urban Form (Pion, London)


