Planning the end of the compact city?

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Abstract: Over the past two decades, compact city ideas have become entrenched as the planning orthodoxy to deliver the future city. High profile brownfield regeneration projects have been the public face of compact city policies, however there is increasing expectation that future growth will be delivered in existing built up residential areas. Almost all focus has been on the renewal potential of existing single titled land parcels. Virtually no consideration has been given to how existing multi-unit stock might be periodically renewed now or in the future. This paper develops a model to test the feasibility of the renewal of existing multi-unit housing across the Sydney Metropolitan Region and aims to demonstrate the practical outcome that would be required for redevelopment to occur under 'business as usual' scenarios. The model demonstrates that left to the 'market', strata renewal is only likely to occur in locations where land values (based on replacement units) are sufficiently high enough to drive redevelopment or when densities are significantly increased above existing permitted levels. The paper will first argue that under market conditions, if these generalised observations are extended over a long time period, the outcome of market driven strata renewal will be a highly fragmented, piecemeal intensification of existing residential areas. Second, the possibility of systematically increasing density every 30 or 50 years as the mechanism through which urban environments are updated is both undesirable, and logically impractical. This model also raises the issue of how low value strata blocks reaching the end of their physical life will be replaced when there is insufficient value in the land to support their replacement.

Introduction

This paper is draws on a two year ARC funded Linkage grant[1] the aim of which is to develop equitable and viable solutions to what has emerged as a fundamental issue facing Australian cities in coming decades: how to effectively, efficiently and inclusively redevelop older areas of privately owned multi-unit strata titled housing to the achieve higher densities needed to accommodate population growth but without exacerbating social inequalities and collateral social disruption. While our cities have long been reworked through urban consolidation and densification, we are now entering new and challenging territory. In many areas now targeted for renewal, replacing existing multi-unit housing presents a complex challenge. Many of these walk-up apartment blocks – particularly in inner and middle ring suburbs and around transport nodes – now sit on land under increasing pressure from planners, politicians and developers for more intensive use (NSW Department of Planning, 2010; NSW Government, 2012; Property Council of Australia, 2009). Furthermore, many are reaching a point in their life cycle where substantial reinvestment will be required to upgrade aging amenity. But the mechanisms by which such goals may be translated in practice have been largely neglected in research on urban renewal. In particular, there has been little attention paid to the financial feasibility of replacing blocks of strata units with new higher density replacements. This paper sets out the results of an exercise to do just that in Sydney.

Background

The desire to see higher levels of urban density, both in housing and jobs, is now a generic planning perspective in all Australian cities, with urban consolidation and compact city policies now the entrenched orthodoxy (Forster, 2006; Gleeson *et al.*, 2004). However, arguably, the current form of residential densification now synonymous with compact city planning policy, the multiunit apartment block, can be seen to be as much a liability for current planning policy as it is an essential component. The origins of strata title apartment building lie in the difficulty developers had in maximising the capitalisation of multi-unit housing in an era when mortgage lenders were reluctant to lend to individual apartment owners under the pre-existing company title arrangements where the sale amounted to a sale of a 'share' in a building, not of the unit itself (Cardew, 1980). This process was revolutionised in 1961 however, with the passing of the *Conveyancing (Strata Titles) Act* in NSW. This historic act enabled the vertical subdivision of property and extended individual property ownership rights to multi-unit forms of housing through the ownership of a 'vertical allotment', essentially a parcel of space in a shared property. This arrangement enabled free transfer of individual units within a scheme unencumbered by other owners and opened a market for individual homeownership of this form of development. Strata title is now a ubiquitous property form, not only in Australia, but around the world. There is an estimated two million strata units in a quarter of a million strata schemes across Australia (City Futures Research Centre, 2015). In NSW alone, there were 675,000 strata 'lots' in 68,400 strata schemes in 2013, with 83% of lots in the Greater Sydney Statistical Area (City Futures Research Centre, 2015). Current strategic housing targets for the five largest Australian cities project a further 1.512m 'infill' dwellings, of which the vast majority will be strata-ed, being built over the next 25 years or so (Easthope & Randolph, 2009). Clearly, as a vehicle for the densification of our cities, strata title has been a stunning success.

However, the initial strata titling legislation avoided a critical issue that is beginning to pose significant problems for those who either plan our cities or and live in strata property. So keen were the proponents of strata title to get the new legislation through, it appears that little consideration was given to how a multi-owned building could be wound up at the end of its economic or physical life. The legislation required 100% of all unit owners to agree to terminate the scheme. For the last 50 years this has not posed too many problems. In Sydney, as elsewhere, the introduction of medium density zonings were often focused on larger single dwelling residential blocks close to town centres or rail stations, in many ways a precursor to today's fashionable transport orientated development planning schemes. The result has been an incremental renewal of older low density residential housing into concentrations of multi-unit strata developments, spreading sequentially outwards along rail lines and town centre locations.

Fifty years on from the *Conveyancing (Strata Titles) Act*, the problems with this 'blind spot' in the legislation as to the eventual redevelopment of the building are becoming apparent with the increasingly uncertain fate of the now aging medium density flat concentrations coming to the fore. Two key issues are emerging. The first is the fact that many of these blocks may be coming to the end of their physical life. Especially where repairs and maintenance have been neglected, these older blocks will be in need

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[1] ARC Linkage Grant LP130100400.

of wholesale refurbishment or replacement. The second issue is the now increasing focus of strategic planning on the urban renewal and densification of existing centres and transport corridors to accommodate the projected population growth of our major urban areas, precisely the places previously densified by earlier rounds of apartment building.

This latter issue has not gone unnoticed by planners, however. The 2005 Metropolitan Plan for Sydney (NSW Department of Planning, 2005) recognised the presence of strata housing as a potential barrier to the successful renewal of strategic centres as it looked to deliver the majority (52%) of the 445,000 dwelling target in a range of existing town centres and corridors. As the 2005 Metropolitan Strategy noted:

> "Existing blocks of flats are unlikely to be redeveloped because of high land value and the provisions of the Strata Scheme Management Act 1996[2] which make them difficult to secure as a whole block to be redeveloped. The higher standards of construction and design that is *(sic)* now required – including underground car parking and improved accessibility for people with impaired mobility – means that this existing housing stock is unlikely to be redeveloped *because it would not be profitable*" (NSW Department of Planning, 2005, p. 139; authors' emphasis).

Although not explicitly stated as such, what this represented was the recognition that earlier phases of urban renewal and densification that had been promoted with vigour in the thirty years after the passing of the *Conveyancing (Strata Titles) Act 1961* (NSW) had now become a significant impediment to any future change due to the unprofitability of such renewal. The 2005 Plan also noted that:

> "Strata Title reform will be investigated to determine whether it can create opportunities for housing redevelopment that will add to the mix of housing" (p. 139).

Subsequently, in 2010, two state government documents (NSW Department of Planning, 2010; NSW Transport and Infrastructure, 2010) both flagged the need for legislative reform to "reduc[e] the majority of strata title holders required to enable strata redevelopment within defined urban renewal precincts" (NSW Transport and Infrastructure, 2010, p. 26).

Following pressure from industry lobby groups (Planning Institute of Australia, 2010; Property Council of Australia, 2009; Strata Communities Australia, 2012; Urban Development Institute of Australia, 2012), a review of the NSW strata legislation was undertaken in 2012 (NSW Government, 2012) which has culminated in changes to the strata legislation to reduce the proportion of unit owners required to terminate a strata scheme from the current 100%, thereby making it more likely the that blocks could be redeveloped in urban renewal locations. Legislation to achieve this was passed both houses of NSW Parliament in October 2015 and was recently introduced in the Northern Territory (Northern Territory Government, 2014). The repercussions of this development on the rights and responsibility for strata ownership have been reviewed in more detail elsewhere (Easthope *et al.*, 2013).

However, the issue of the financial viability of renewing older strata blocks, especially in locations targeted for urban renewal, remains a significant issue. Initially flagged in the 2010 Sydney Metropolitan Strategy (NSW Department of Planning, 2010), the then NSW Department of Planning developed an Urban Feasibility Model that it is now used to assess the potential for renewal across the city by providing "an indicator of what is possible under prevailing economic conditions" (NSW Department of Planning, 2010, p. 225). The current 2014 Sydney Metropolitan Strategy *Plan for Growing Sydney* (NSW Department of Planning and Environment, 2014) pursues the pragmatism of this market-led approach further. Here the aim is to "…put in place flexible planning controls which enable housing development in locations that are feasible for development" (NSW Department of Planning and Environment, 2014, p. 64). In other words, the notion that what was deliverable would equate to what was economically feasible has firmly taken root in the planning for Sydney. Henceforth, renewal and densification would be determined by recourse to what the market might be willing to deliver.

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[2] It is the *Strata Schemes Development Act* that determines strata termination requirement, the *Strata Schemes Management Act*

Unfortunately, older strata blocks present a problem for many of the potential targets for urban renewal. To date, the NSW DoPE has avoided the issue largely by excluding areas with significant numbers of strata-ed property from the Priority Precincts designated for focussed renewal activity. In time however, the issue of strata renewal will come increasingly to the fore as repair and renovations costs mount in aging buildings and renewal pressures mount.

This paper sets out a methodology by which the financial viability of renewing older strata schemes across Sydney can be assessed, based on a development feasibility model. The main value of this exercise is to highlight the constraints posed by the property market itself on the likelihood of a strata scheme being effectively renewed and extends to the macro city-wide scale previous research undertaken in local areas in Western Sydney (Pinnegar & Randolph, 2012). The model therefore provides useful evidence as to which parts of the city the market might be relied upon to generate renewal and those parts that will require greater public intervention to support change. The paper proceeds with a note on the methodology followed by the presentation of the findings and then a discussion of their significance. The longer term policy implications are reflected upon in the conclusion.

Methodology

A common approach to understanding the feasibility of a given development scenario is to establish present land conditions and test whether a development would be feasible under current or modified planning arrangements. The method utilised for this project however takes a different approach by seeking to estimate the number of units that would need to be developed for any given situation to become feasible. In reality there are going to be particular planning constraints which will impact of the practical possibility of delivering a particular scenario. However, rather than feed this in as an upfront constraint on the feasibility modelling, this new approach enables some commentary to be made of the type of planning environment needed to establish a financial case for redevelopment. Once this has been achieved, a comparison can be made of the output floor space ratios and the existing planning framework to determine the likelihood of a redevelopment scenario being approved.

In order to analyse the feasibility of redeveloping existing strata schemes, some base line information about the existing strata stock and existing housing market was required. Using land title records of strata properties obtained from NSW Land and Property Information, a profile of existing strata schemes registered prior to 1990 was mapped across Greater Sydney as of December 2013. Individual lot records were aggregated based on strata plan numbers, enabling both the number of lots and the registration date for each scheme to be established. In this analysis, the registration date was used as a proxy for the age of a given building, however it should be noted that strata legislation was not introduced until 1961 and as such some schemes registered in the early 1960s were potentially built earlier than this. The summary of each scheme was then matched to a cadastral layer based on the strata number, which allowed both the geographic location and the size of the underlying land to be attributed to all strata plans across Greater Sydney.

To estimate both the cost of existing development and the potential sale values for new development, different price points for units in a given area of the city were generated based on property sales data for the 2013 calendar year. NSW Valuer-General sales data was matched to the strata profile using lot and plan identifiers. These sales data points were then stratified by scheme registration date based on four time bands, 1961 to 1969, 1970 to 1994, 1995 to 2010 and 2010 to 2013 to produce lower, median and upper quartile values for each Statistical Area Level 2 (SA2) and Statistical Area Level 3 (SA3) across Greater Sydney. SA3s with less than 30 sales records have been excluded from the analysis. Likewise when there are less than 30 sales records in the relevant strata scheme age band for each SA2, then the percentile values for that age band at SA3 lever were used. In a small number of cases, there were fewer than 30 records for a particular age band in the corresponding SA3. In those cases, the values for all age categories within the SA2 were used.

There are three principal components to estimating the feasibility of redevelopment of existing strata schemes. First, an estimation of the likely current market buyout cost of the land and property (flats) is generated based on NSW Valuer-General's sales data for properties in blocks of the same age in the local ABS Census SA2 area and the estimated stamp duty payable by a prospective developer. Second, the cost of a replacing multi-unit development based on a range of building quality and type scenarios is estimated, using the current Rawlinsons Construction Cost Guide (Rawlinsons 2014),

assuming a 2-bed unit based on the SEPP 65 design guidelines[3], to produce a cost per dwelling (including a 50% on-cost overhead and 20% builders profit component). Third, an estimate of the likely sale proceeds for each development scenario based on the current sales values of similar new build development in the SA2 area is generated. A redevelopment is only deemed feasible when the potential sale proceeds exceed the costs and the model generates the number of units that would be required to trigger this event. The next component of the analysis is to estimate the building form outcome in floor space ratio and building height terms to give an indication of the likelihood of any particular scenario occurring within the broad metropolitan planning frameworks. A full explanation of this methodology has been published elsewhere (Troy *et al.*, 2015) and will not be detailed here.

Results

The model tests the development potential for two different types of buildings ("walk up flats": under 4 storeys; "high rise flats": four or more storeys) and three different build qualities (basic, medium and high). The resulting potential for redevelopment is illustrated in Table 1 which outlines the range of redevelopment outcomes that are possible:
1. Yes – Development permissible under prevailing (walk-up) planning guidelines;
2. Maybe - Potentially permissible depending on variations in some of the constraints included in the FSR and Building Height calculations, such as increasing building footprint from 35% up to a maximum of 80%;
3. No - Not likely due to the very high FSR and therefore building heights returned as a result of the initially costs analysis; or
4. N/A - When the construction costs per unit are higher than the potential sale price at that price point within the area, then the feasibility formula will return a negative value. This indicates that regardless of buyout cost and underlying planning restrictions, it would not be possible reach a viable redevelopment scenario.

Table 1 Floor Space Ratios

			Yes	Maybe	No
Walk Up Flat		FSR	Up to 1:1	Between 1:1 and 2:1	Above 2:1
		Height (stories)	3	3-4	N/A*
High Rise Flat		FSR	Up to 2.5:1	Between 2.5:1 and 3.5:1	Above 3.5:1
		Height (stories)	Up to 8	8-13	Above 13

* It would cease to be a walk up flat if FSR reached 2:1 even if site coverage approached 100% as it would require a building of 4 or more stories, which would then place it in Rawlinsons Construction Cost category of 'High Rise' because of the additional costs of building over four stories.

Figure 1 shows the redevelopment viability of existing strata blocks if redeveloped as a new walk up flat development. The figure is separated into four parts to reflect the different viability categories of redevelopment potential listed in Table 1, and an accumulation of all categories. The figure shows that there are existing strata schemes across the metropolitan region that could feasibly be redeveloped, just as there are many schemes that are in the 'maybe' and 'no' categories. The layering of the different categories cumulatively produce an indication of the relative differences in local market that support or not renewal of strata schemes. Figure 1 indicates that greatest potential for strata renewal exists in northern and eastern suburb locations which are consistent with high value real estate markets. Property value uplift here clearly can drive a renewal process. Conversely, areas in middle and outer suburban location are less likely to support renewal activity. Figure 2 provides an amalgamated distribution, highlighting the relative feasibilities across the city.

Figure 3 shows the amalgamated redevelopment potential for the high-rise flat category of building and clearly indicates a much wider spread of areas of viability across Greater Sydney. This category of building would require rezoning to support higher densities in many locations, so in broad measure indicates parts of the city that could support viable redevelopment if planning arrangements were to change. Figure 4 shows a combination of the 6 scenarios with scenarios being prioritised on each land

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[3] State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development, details minimum design standards for apartments including floor areas

parcel to reflect the relative likelihood of redevelopment occurring. Walk up flat categories, ranked high quality to basic, are given preference over high rise, also ranked from high quality to basic. Lots that are not listed as viable ('Yes') in any category, but are listed as 'Maybe' in any category, are assigned a 'Maybe' category. Lots listed as 'No' or 'N/A' in all categories are assigned accordingly. Areas shown as purple in Figure 4 therefore represent lots that could be redeveloped as walk up flats, which is generally considered permissible under current planning requirements. Green areas reflect lots that would need a planning framework that allows construction of between 4-8 stories for redevelopment to be viable, which in most areas would require changes to local planning instruments.

Red and blue (No and N/A) categories are locations where redevelopment is not currently viable under any scenario based on current market conditions. In walk up flat and high rise scenarios, three distinct areas of 'No' or 'N/A' categories are apparent, (i) along the train line corridors between Liverpool and Campbeltown and out to Penrith; (ii) in Fairfield and Cabramatta; and (iii) around Wiley Park and Lakemba. The 'N/A' category indicates areas where the construction costs of this form of building exceed the existing property market in this category, while the 'No' category indicates areas where the margin between construction cost and sale value are so low that any new development would need to be built at very high densities (above 3.5:1 floor space ratio) to make it viable.

Figure 5 and Figure 6 show the distribution of feasible redevelopment scenarios aggregated at SA2 level, first as a proportion of the number of schemes in the SA2 and second as total numbers of schemes that could be redeveloped. This aggregation demonstrates the relative differences in the housing market that will or will not support renewal of existing strata schemes. High value SA2s close to the coast or on the harbour demonstrate the greatest potential for renewal of existing strata schemes.

Figure 6, which shows the number of schemes that could be renewed by SA2, reflects both the number of existing schemes in the area combined with favourable local markets. As expected, many of the darker zones appear in eastern suburb and coastal areas, however there are a two of notable exceptions - the Kogarah/Hurtsville area, and in the northern suburbs near the Macquarie Park zone - both of which have been the focus of significant investment in the recent past. Figures 7 and 8 provide comparable maps for high rise redevelopment. Figure 9 and Table 2 summarise the number of strata schemes that are assessed as being renewable by scheme size. Smaller schemes (3 – 5 lots) are the most likely to be feasible for redevelopment, which suggests, if left to 'the market' the focus of renewal would likely be on schemes of this size. It is in this segment of the market that we would expect smaller local builders and developers to be the most active.
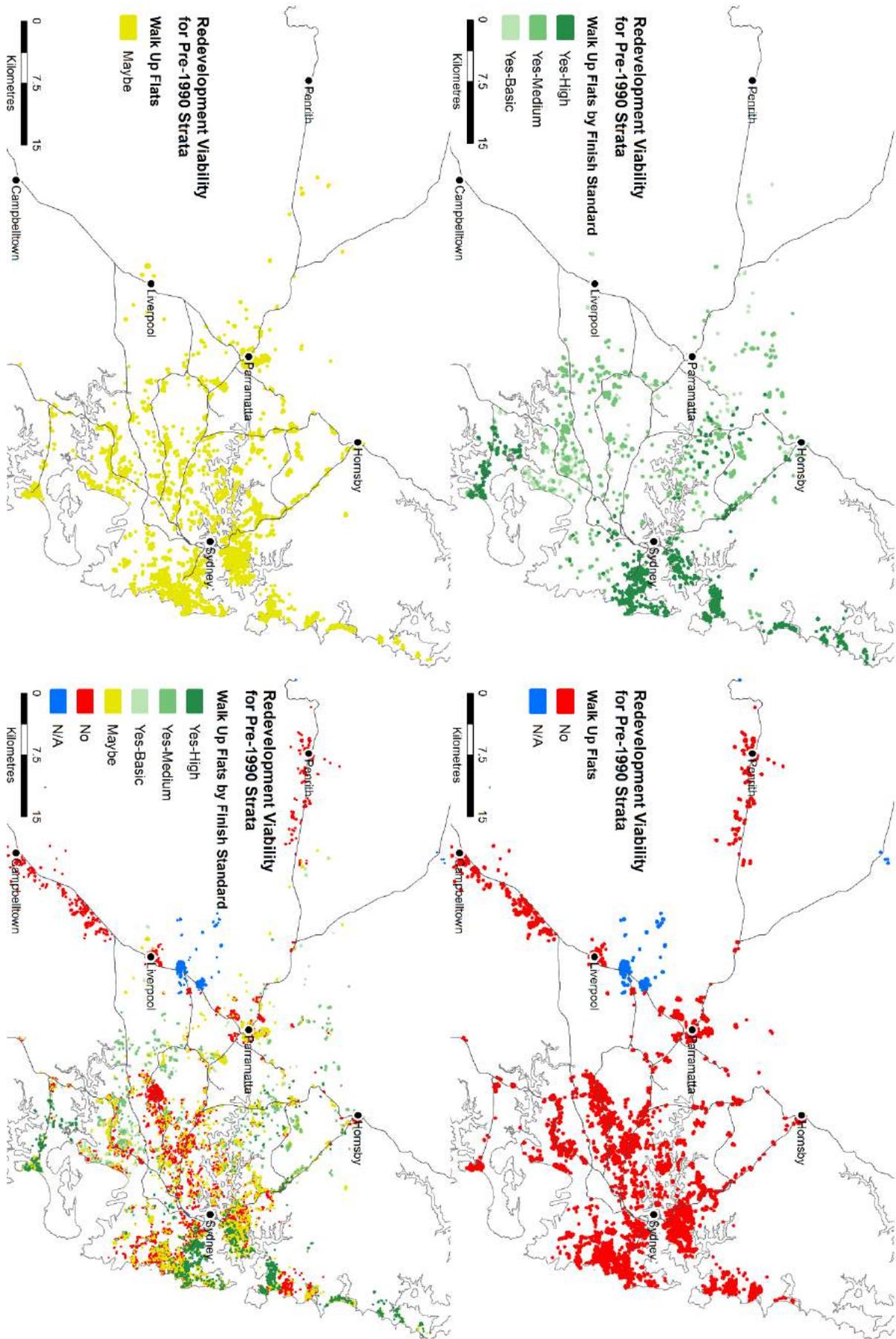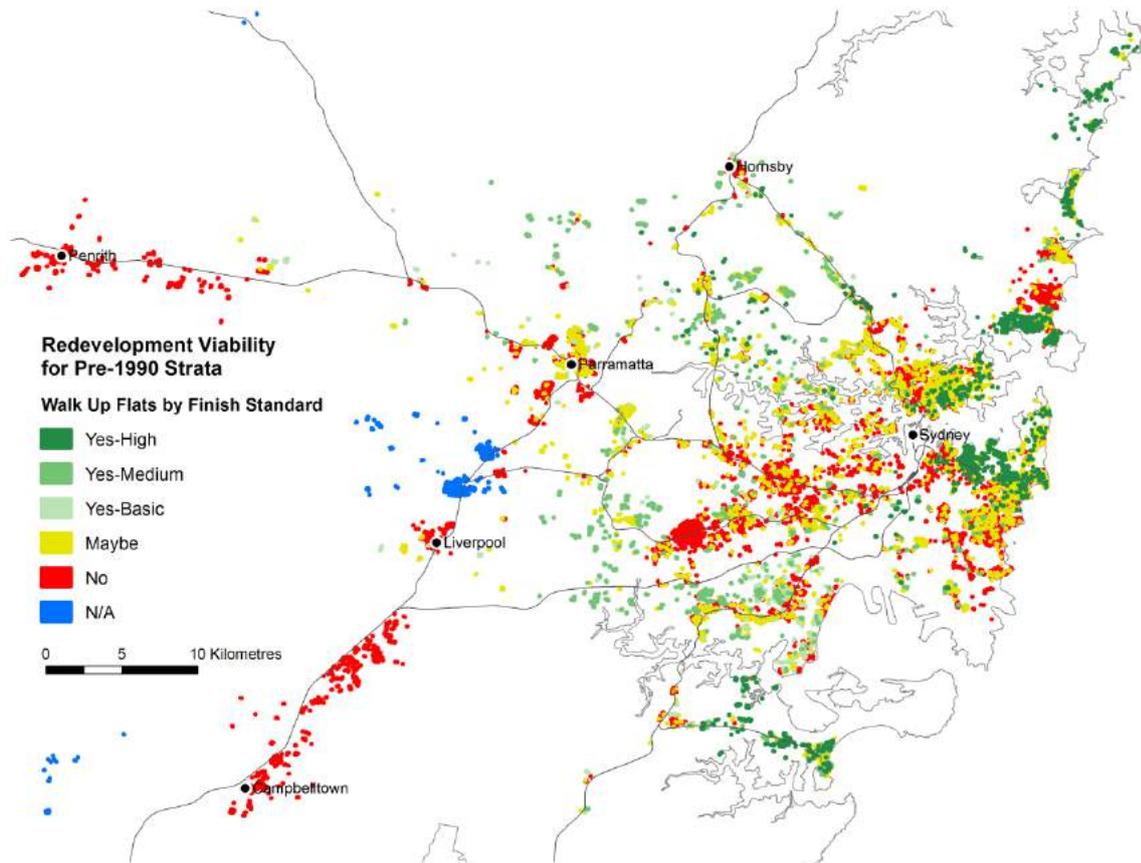
Figure 1: Walk up flat viability by category

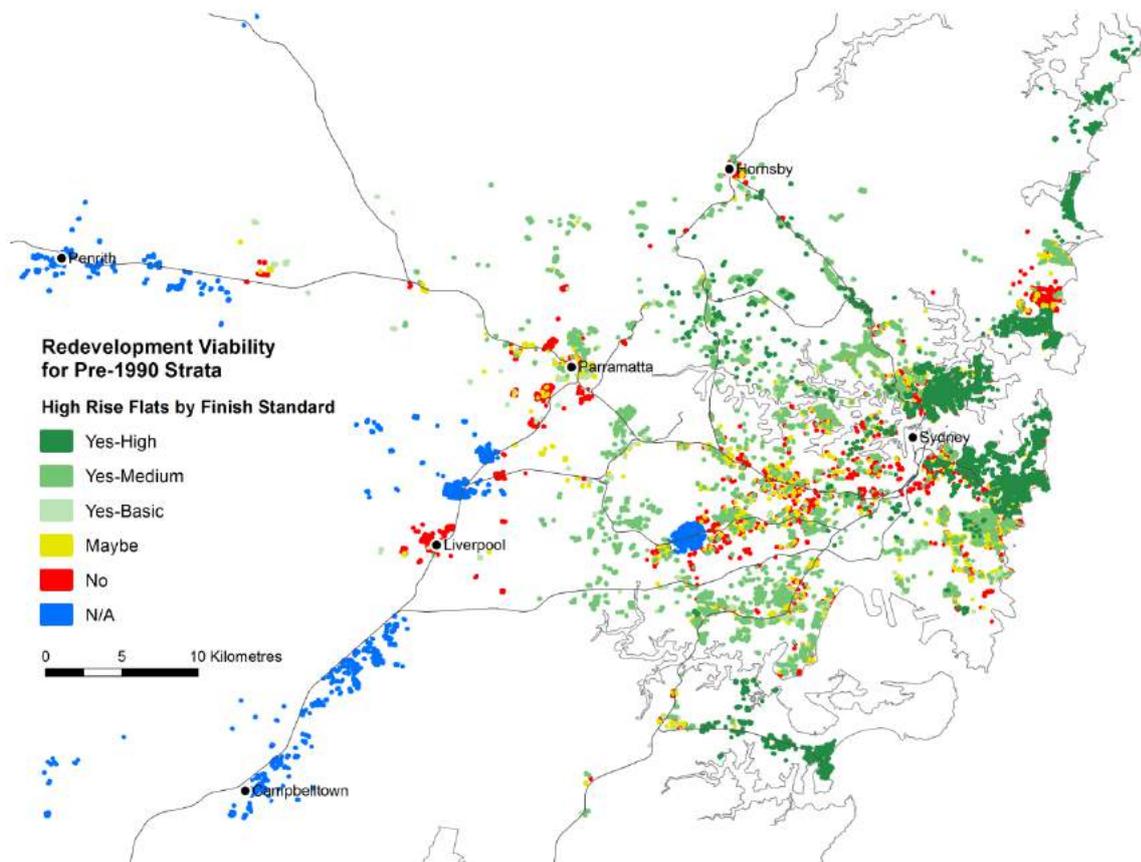**Figure 2: Accumulated walk up viability**

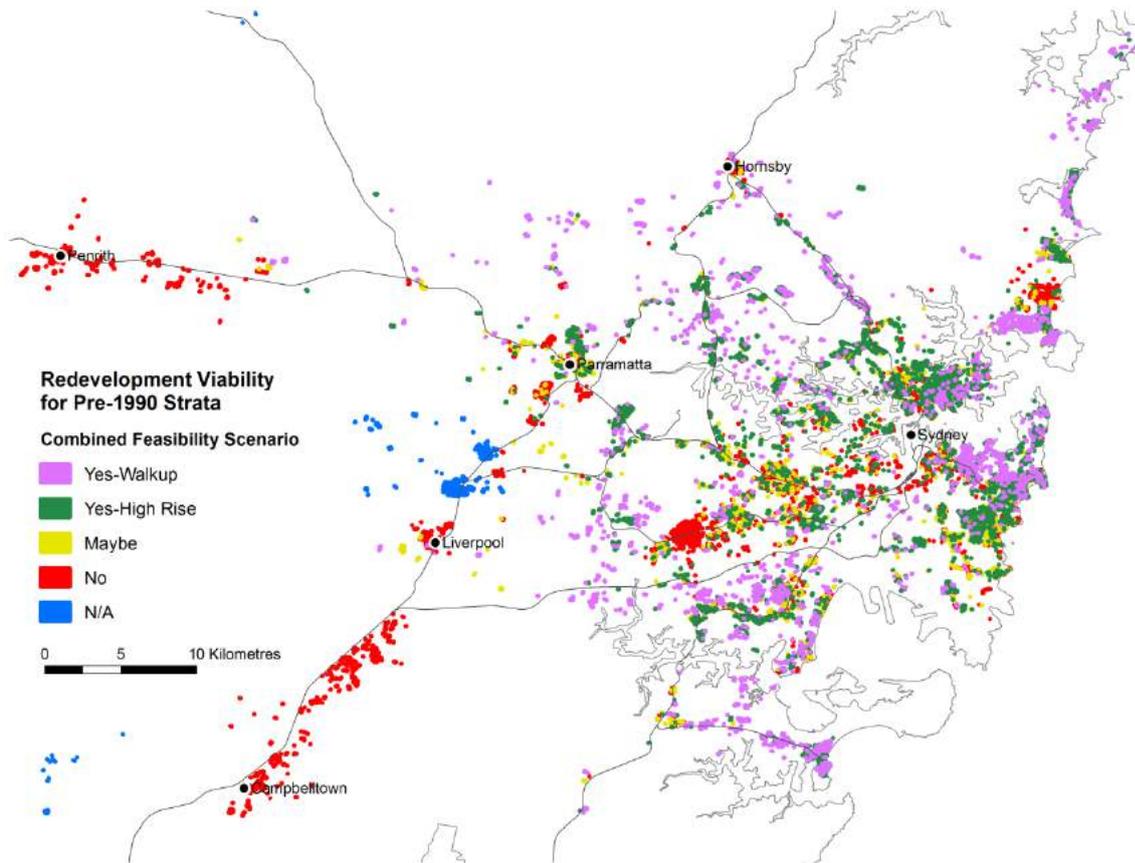**Figure 3: Accumulated high rise flat viability**

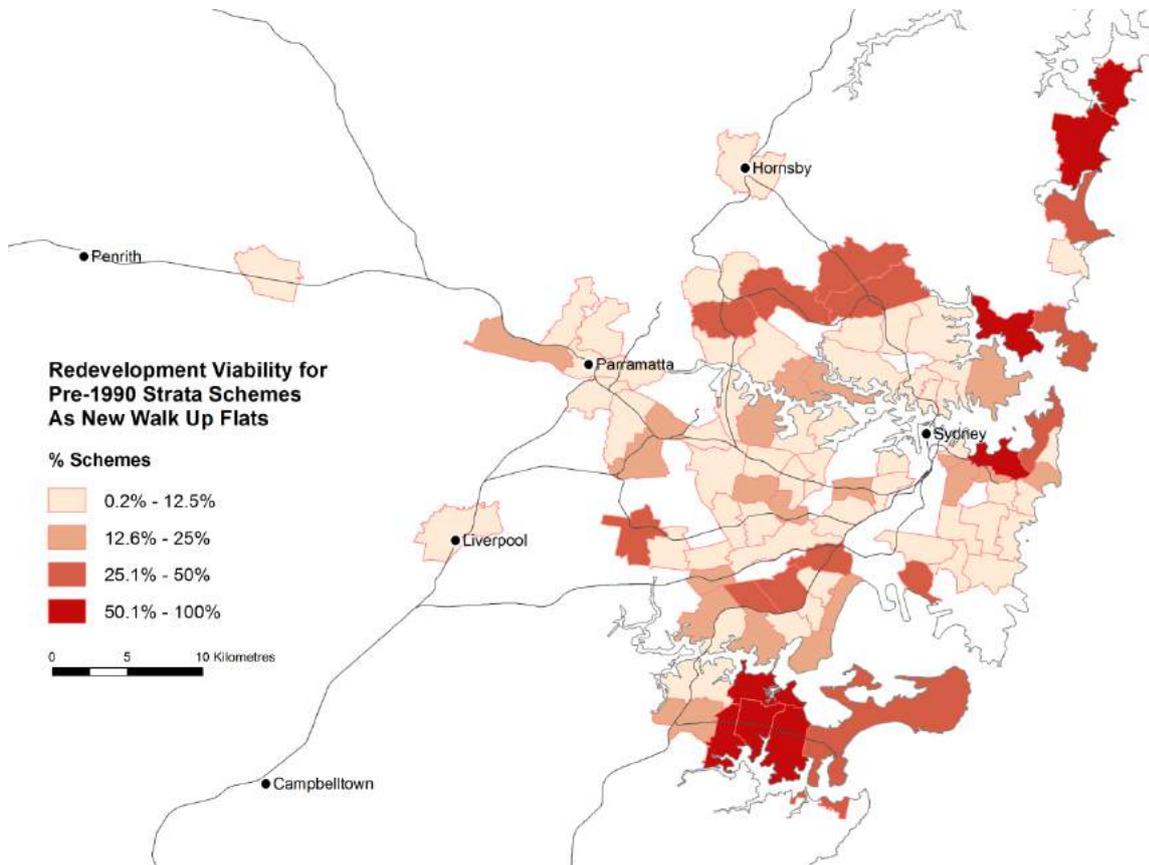**Figure 4: Accumulated viability categories for all renewal scenarios**

Figure 5: Proportion of schemes that could be renewed by SA2
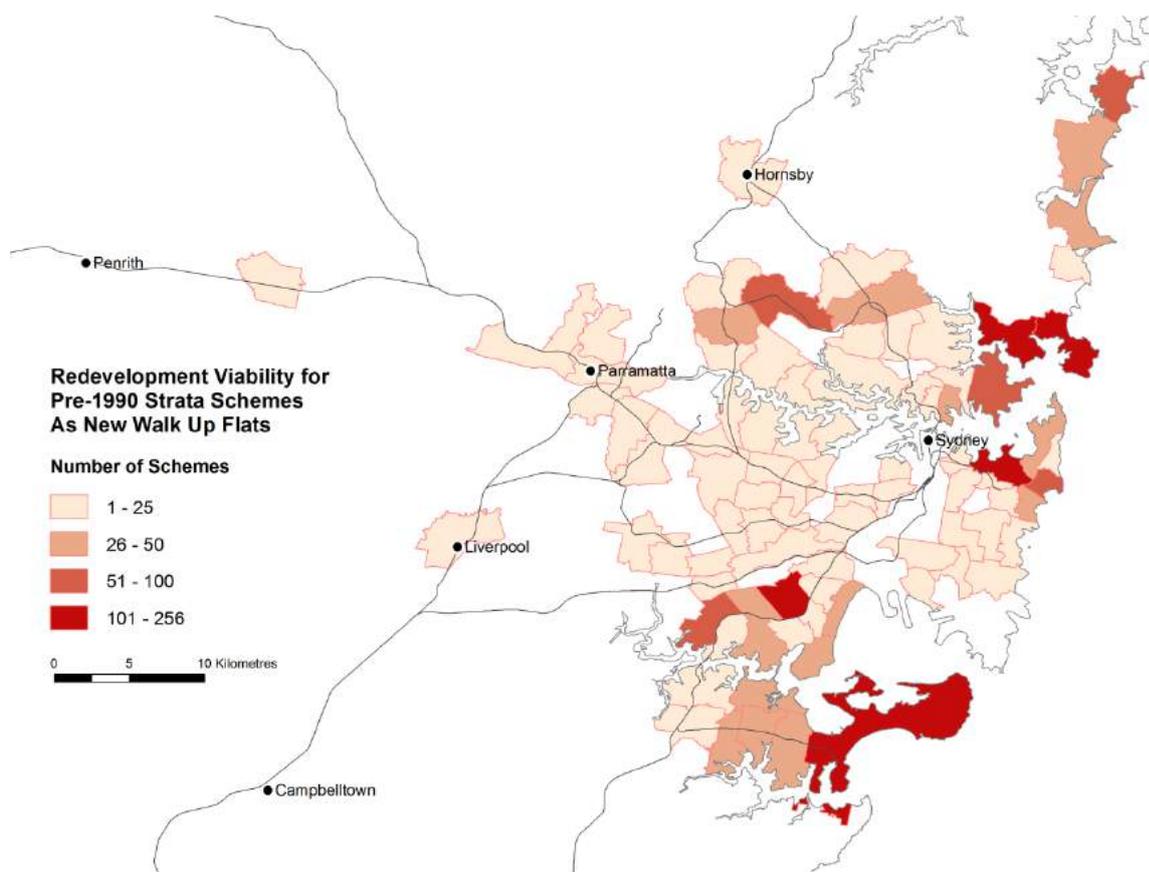
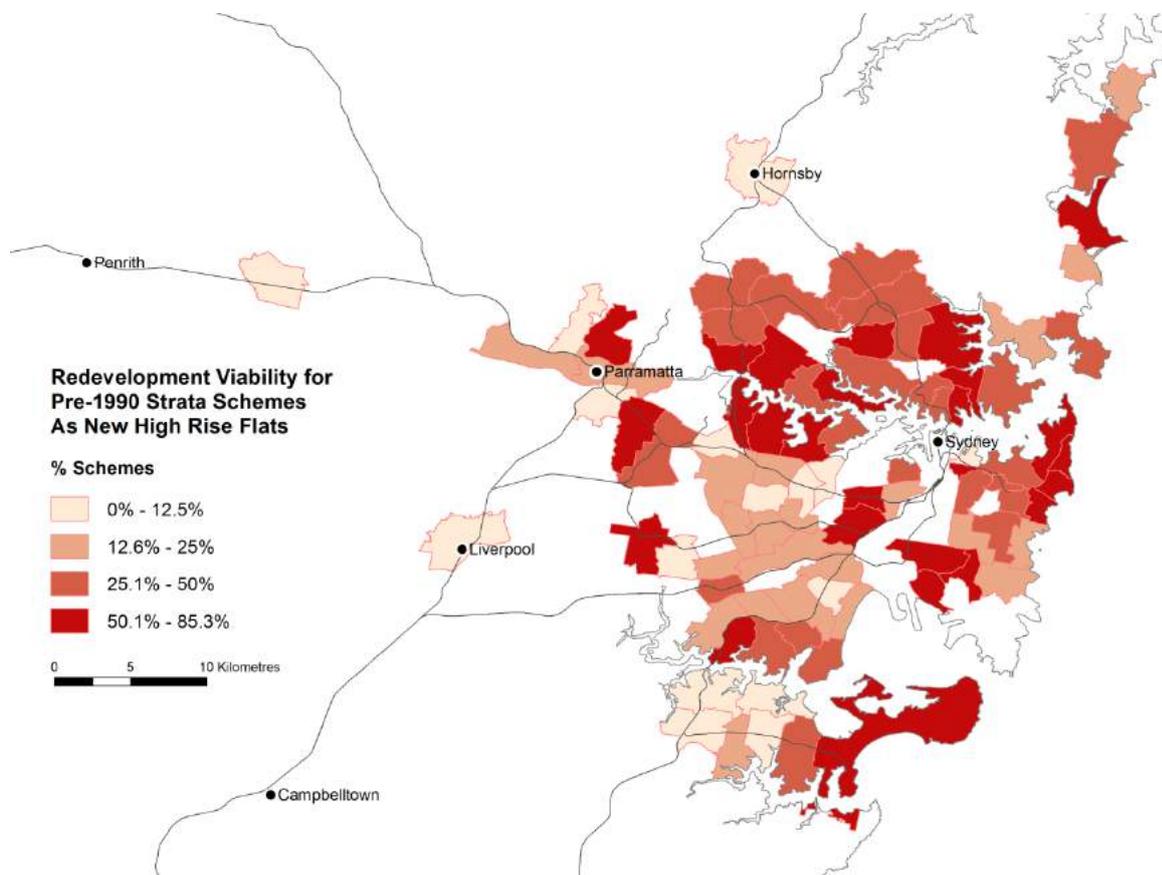**Figure 6: Number of schemes that could be renewed by SA2**

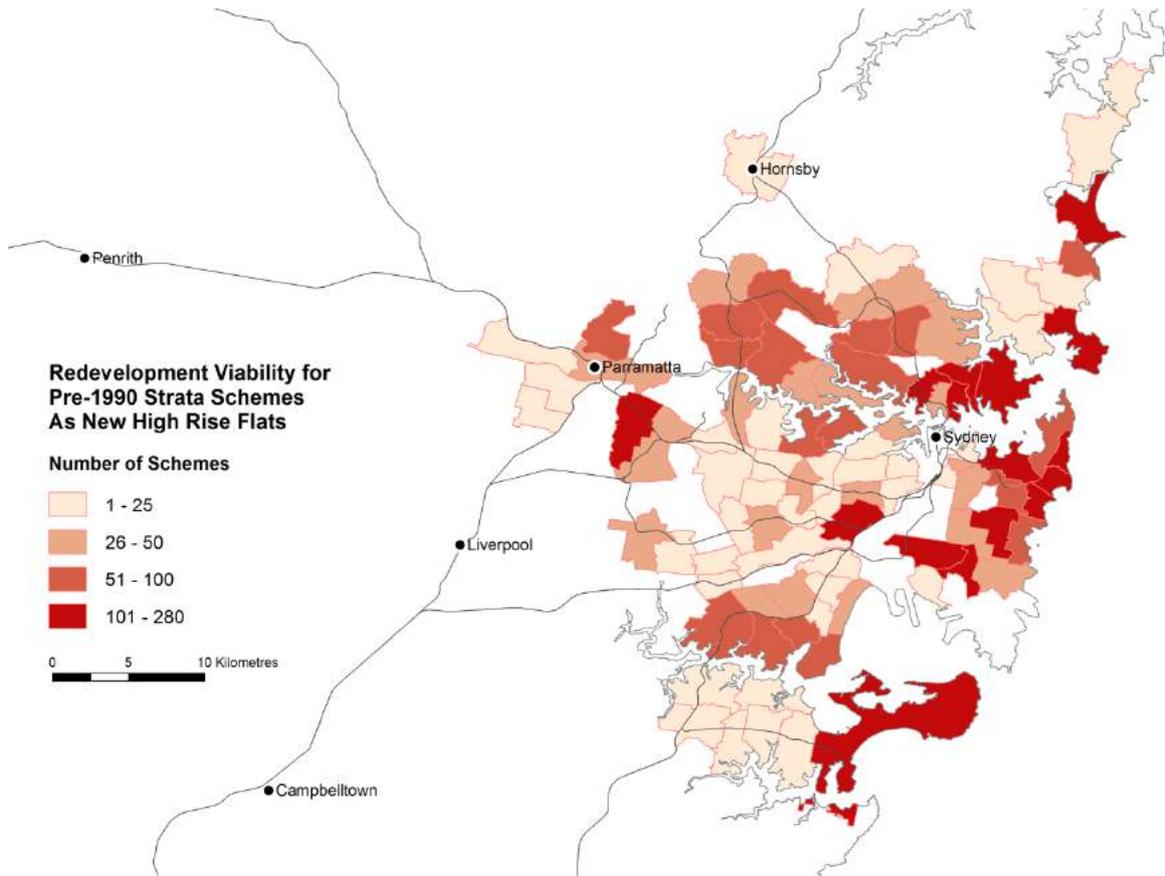**Figure 7: Proportion of schemes that could be renewed as high rise by SA2**

Figure 8: Number of schemes that could be renewed as high rise by SA2
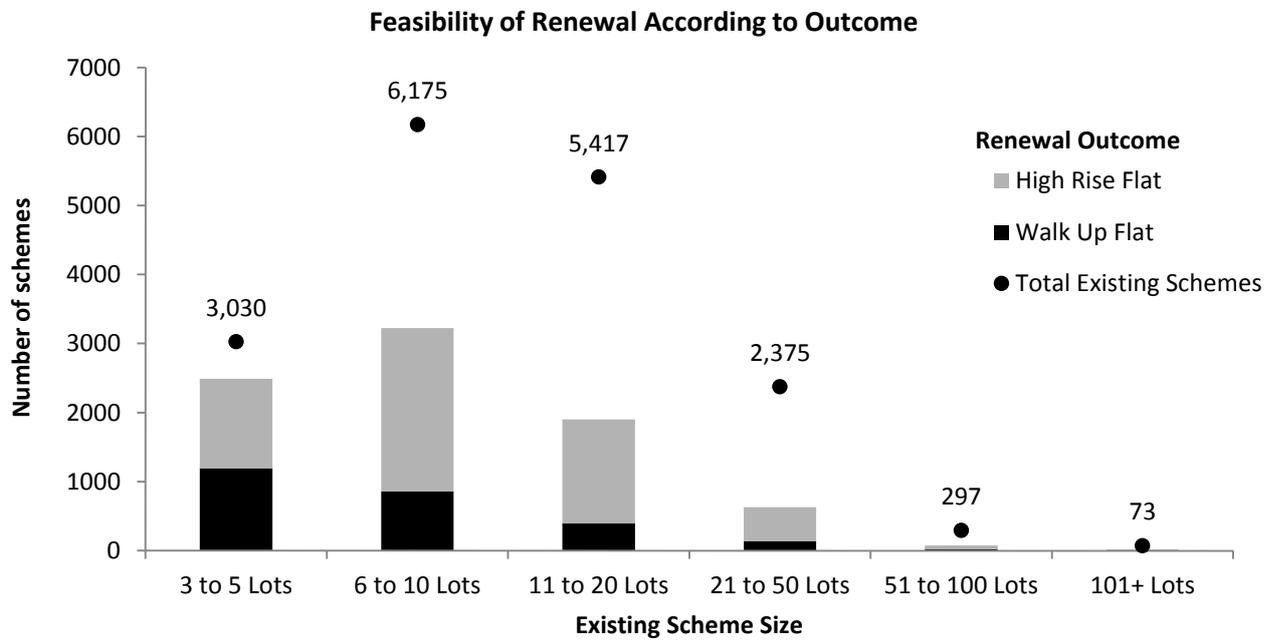

Figure 9: Number of strata schemes able to be redeveloped by existing scheme size category

Table 2: Renewal feasibility by outcome (percentages of row totals)

Existing Scheme Size	Yes-Walkup		Yes-High Rise		Maybe		No/NA		Total	
	No.	%	No.	%	No.	%	No.	%		
3 to 5 Lots	1,194	39.4%	1,294	42.7%	210	6.9%	332	11.0%	3,030	100%
6 to 10 Lots	854	13.8%	2,368	38.3%	1,315	21.3%	1,638	26.5%	6,175	100%
11 to 20 Lots	393	7.3%	1,507	27.8%	1,317	24.3%	2,200	40.6%	5,417	100%
21 to 50 Lots	136	5.7%	492	20.7%	396	16.7%	1,351	56.9%	2,375	100%
51 to 100 Lots	21	7.1%	53	17.8%	36	12.1%	187	63.0%	297	100%
101+ Lots	3	4.1%	15	20.5%	2	2.7%	53	72.6%	73	100%
Total	**2,601**	**15.0%**	**5,729**	**33.0%**	**3,276**	**18.9%**	**5,761**	**33.2%**	**17,367**	100%

Discussion
Value Change – Gentrification or Densification
There are a number of both particular and generalised observations that can be made about the outcomes of this model. The first is that the model demonstrates two broad scenarios under which a market led regeneration process can occur, both of which rely on some form of value uplift. In general terms, the only buildings that can effectively be renewed are those where there is a significant differential in land cost and uplift value either through increases in density, or increase in value due to quality changes. Unsurprisingly, in Sydney these areas area clustered around harbour frontage and the coastal strip display the greatest feasibility for walk-up flats and high rise, while other parts of Sydney, particularly inner west and north shore area, indicate that redevelopment to walk-up flats is more marginal. In other locations, such as inner west areas, the difference in price between low quality and high quality stock does not exist to the extent that it would make a renewal viable without significant changes to density of dwellings. In these areas, an increase in dwelling density would be required for renewal to become feasible. This may occur because existing lots are under-developed relative to current planning controls, as indicated by the spread of viable locations shown in Figure 1.

These two 'conditions' under which renewal could occur in a market based scenario can be summarised as either gentrification or densification, or in other words a market led process or a planning led process. The gentrification of areas reflects a 'rent gap' (Smith, 1996) or 'value gap' (Hamnett & Randolph, 1986) where initial base property values are significantly lower than the improved values. The rent gap idea advocated by Smith suggests that this 'gap' in value can be attributed to progressive suburbanisation, and restructuring, of urban capital leading to devaluation in land price in certain parts of the city. Many of the large scale urban renewal and gentrification processes that have occurred in Sydney over the past 25 years could be attributed in some part to the restructuring of urban economies and shifting preferences for consumption oriented urban living. In contrast, Hamnett & Randolph's value gap proposition was specifically related to value change in the older higher density mansion flat market in inner London during the 1970s where value up-lift was exploited by tenure switching – from rental to leasehold ownership. They also argued that his mechanism was one of the primary drivers of wider gentrification in inner city housing markets, at least in London. While the particularities of the Hamnett & Randolph and Smith examples are not strictly comparable to the Sydney context, as devaluation of wholesale tenure change has not been the catalyst, they both reflect value change or value uplift as the both the driver and outcome of change. A transition from 'low value' property to 'high value' property underpins a likely driver of strata renewal.

In a relatively narrow group of locations, indicated by the purple locations in Figure 4, other factors have become increasingly implicated in land economies. A evidenced by the rising importance of some of the more ephemeral elements of city, the preoccupation with design, fashion and life-style over substance and use value that has been part and parcel of the entrepreneurial city (Harvey, 1989; Murphy & Watson, 1997). In this hyper-commodified city, consumption of 'views of great multitude', though seemingly detached from the productive process, become enrolled in a system of market exchange (Troy, 2014). Ocean views and harbour views coupled with luxury apartments become key factors in driving the 'value gap' and become a central feature of the gentrification process.

Another key difference from Smith's rent gap thesis in the Australian context is that there has not been so much a *de*-valuation of urban land, but rather a *re*-valuation of urban land, more akin to Hamnett & Randolph's formulation. Through zoning changes, for example, former industrial spaces instantly

increase in value through allowing residential construction. This speaks to the second 'condition' driving this change, which is densification associated with a land use change. Driving economies of property development through changes in land zoning to allow more development on a given site is of course nothing new, and has been fundamental in shaping urban land economies in Australian cities for many years. The reliance of zoning changes as a core driver of change situates speculative activity, rather than meeting particular housing objectives, as the central feature of house building. While this may offer a lever or catalyst for change to occur, the history of land development in Australian cities should alert us to the problems of land speculation driving change particularly when affordability of housing is an increasingly central concern to government at all levels.

Planning the end of the compact city?
A corollary of value change through densification is that some areas can never be redeveloped unless there is a large devaluation of the base land cost. For example, assuming that it is desirable to redevelop an existing tower block or higher density central city block, the buyout cost of existing owners will be so prohibitively high that the scenario may never be profitable. The base land cost would have to drop to such a level to create a large enough differential between old prices and new prices. In many ways this is the process that has underpinned the 'revanchist' (Smith, 1996) model of gentrification as experienced in many cities in North America and Europe whereby areas effectively become 'slums' with little land value often through withdrawal of investment and deindustrialisation of urban cores over prolonged periods. In other words, to renew areas of the existing high density, the creation of a substantial rent or value gap would be required, where the land value becomes almost negligible in the context of the overall development.

The alternative is for the new development to substantially increase the number of units (i.e. the height of the building) to levels not commonly experienced in the Sydney context. The value change generated through a rezoning process has been the major catalyst behind the renewal of cities with limited land resources such as Singapore and Hong Kong. But this is problematic in a logical sense because in order to periodically renew buildings of higher density the height would effectively need to be substantially increased each time. Part of the argument around termination is proceeding on the basis that buildings have lifespan of 30 or 50 years and that periodically they should be torn down and rebuilt. Apart from being socially disruptive to instigate such dramatic changes every 30 years, it would be both impractical and impossible to do the time horizon is extended to 100 or 150 years (i.e. 3 to 5 reconstructions). To rebuild an existing 15 storey building would require doubling its height to make it financially possible, so after the second reconstruction it would be 60 storeys high. Such dramatic changes in density would also require major reinvestment in the surrounding urban infrastructure to address increased demand. There is currently limited capacity of existing infrastructure to accommodate increased population density and the recent experience in Sydney demonstrates the abject failure of successive governments to deliver public amenities and infrastructure to meet even the present demand. Unless the form and structure of the city broadly is reshaped every 30 to 50 years the feasibility of such a process is severely limited. Logically this indicates that large parts of the compact city will never be renewed through this market driven process.

As much as this is an issue of termination and renewal, it raises more important questions about the form and quality of buildings being built now. The logical improbability of renewal when considered over longer time frames suggest that greater consideration should be given to the longer term durability of structures planned for and built today. As noted in previous research, building defects in new buildings are a major issue for the compact city of today, (Easthope *et al.*, 2012) and addressing building defect issues forms part of the current legislative reform package. However, as of yet, the links between building defects and the long term issue of termination and renewal have not been explored or understood as a policy issue. Quite apart from what all this means for 'owners' of strata lots periodically forced to sell out for further renewal (see Randolph & Easthope, 2014), the critical issue of termination and renewal is not about planning for a compact city of today, but of planning the end of the compact city tomorrow.

References
Cardew, R 1980, 'Flats in Sydney: the thirty percent solution?', in J Roe (ed.), *Twentieth century Sydney : studies in urban and social history*, Hale & Iremonger, Sydney.
City Futures Research Centre 2015, *Strata Data 2013: A summary Analysis*, Issue 5 June 2015, City Futures Research Centre, UNSW Australia.

Easthope, H, Hudson, S & Randolph, B 2013, 'Urban renewal and strata scheme termination: balancing communal management and individual property rights', *Environment and Planning A*, vol. 45, no. 6, pp. 1421-1435.

Easthope, H & Randolph, B 2009, 'Governing the Compact City: The Challenges of Apartment Living in Sydney, Australia', *Housing Studies*, vol. 24, no. 2, pp. 243-259.

Easthope, H, Randolph, B & Judd, S 2012, *Governing the Compact City: The role and effectiveness of strata management*, City Futures Research Centre, Sydney.

Forster, C 2006, 'The Challenge of Change: Australian Cities and Urban Planning in the New Millennium', *Geographical Research*, vol. 44, no. 2, pp. 173-182.

Gleeson, B, Darbas, T & Lawson, S 2004, 'Governance, Sustainability and Recent Australian Metropolitan Strategies: A Socio-theoretical Analysis', *Urban Policy and Research*, vol. 22, no. 4, pp. 345 - 366.

Hamnett, C & Randolph, B 1986, 'Tenurial transformation and the flat break-up market in London: the British condo experience', in N Smith & P Williams (eds), *Gentrification of the city*, Allen & Unwin, London, pp. 121-152.

Harvey, D 1989, 'From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism', *Geografiska Annaler. Series B, Human Geography*, vol. 117, no. 1, pp. 3-17.

Murphy, P & Watson, S 1997, *Surface city: Sydney at the millennium*, Pluto Press, Annandale.

Northern Territory Government 2014, *Termination of Units Plans and Unit Title Schemes Bill 2014* [online], viewed 7 July 2015, http://www.austlii.edu.au/au/legis/nt/bill_srs/toupautsb2014514/srs.html.

NSW Department of Planning 2005, *City of Cities: A Plan for Sydney's Future*, NSW Government, Sydney.

NSW Department of Planning 2010, *Metropolitan Plan for Sydney 2036*, NSW Government, Sydney.

NSW Department of Planning and Environment 2014, *A Plan for Growing Sydney*, NSW Government, Sydney.

NSW Government 2012, *Making NSW No. 1 Again: Shaping Future Communities: Strata and Community Title Law Reform Discussion Paper*, NSW Fair Trading, Sydney.

NSW Transport and Infrastructure 2010, *NSW Metropolitan Transport Plan: Connecting the City of Cities*, NSW Government, Sydney.

Pinnegar, S & Randolph, B 2012, *Renewing the West: Prospects for urban regeneration in Sydney's western suburbs*, City Futures Research Centre Paper No.13, UNSW Australia.

Planning Institute of Australia 2010, *New Life for Strata Title Housing and Commercial Buildings: Amendment of the NSW Strata Scheme Legislation* [online], viewed 7 July 2015, http://www.planning.org.au/documents/item/449.

Property Council of Australia 2009, *Strata Title Renewal: accommodating growth, giving people choice, renewing our cities*, Property Council of Australia, Sydney.

Randolph, B & Easthope, H 2014, 'The Rise of Micro-government: Strata Title, Reluctant Democrats and the New Urban Vertical Polity', in B Gleeson & BB Beza (eds), *The Public City: Essays in Honour of Paul Mees*, Melbourne University Press, Carlton, pp. 210-224.

Smith, N 1996, *The new urban frontier : gentrification and the revanchist city*, Routledge, London ; New York.

Strata Communities Australia 2012, *Community Renewal 2012* [online], viewed 7 July 2015, http://cdnnsw.stratacommunity.org.au/wpcontent/uploads/2014/04/community_renewal_2012.pdf

Troy, L 2014, '(Re)Producing Nature in Pyrmont and Ultimo', *Geographical Research*, vol. 52, no. 4, pp. 387-399.

Troy, L, Easthope, H, Randolph, B & Pinnegar, S 2015, *Renewing the Compact City - Interim Report*, City Futures Research Centre, UNSW Australia.

Urban Development Institute of Australia, N 2012, *Strata Renewal: solving the puzzle* [online], UDIA NSW, viewed 1/12/2014, http://www.fairtrading.nsw.gov.au/biz_res/ftweb/pdfs/About_us/Have_your_say/Review_of_strata_community_scheme_laws/Associations_and_other_entities_submissions/Urban_development_institute_of_aust_nsw.pdf.