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Sustainable Urban Consolidation in Australian Cities

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Abstract
It is now recognized that the sustainability of major cities is integral to their quality of life in the future. This has been recognized around Australia, and in the last decade seen all the major cities produce planning schemes aimed at the long term sustainability of growth. However these plans are struggling to come into fruition. The schemes have been recognized as being a great success at an ideological level for introducing limits on urban boundaries and supporting urban consolidation. However the requirement of the schemes on increasing the density of existing built up areas is met by residents concerned with the effect of consolidation on their local communities. This paper identifies two facets of consolidation schemes that have the potential to defuse negative connotation within residential communities. Firstly the ability of schemes, using Melbourne 2030 as a basis, to communicate the visual impact of consolidation to community groups. Secondly the ramifications negative views of development within community groups are having on the efficiency of the development application process. Further study into the communication to residential community groups is recommended as showing great possibilities for reducing the fear of infill developments.

Keywords
Urban consolidation, Residential communities, Sustainability, Australia

1. Introduction

The need for development to be sustainable and cater for rising housing demands have led cities urban progression around the world in the 21st century to be under critical review and pressure to change (Foster, 2006; Murray and Khor, 2011; Randolph, 2006). Today this trend of expansion through low

densities at the periphery of cities is known globally as *Urban Sprawl* and has become common in cities around to world. Initiated by the suburbs increased popularity in the mid 20th century, particularly after World War II, its rate of expansion today is being fuelled by a souring demand for housing and is in tern causing the sustainability of our cities to be threatened. In Australia the demand for housing development is reaching new highs, with increasing population growth and changing housing compositions. Australia's population is projected to grow from around 22 million people currently to 35.9 million people in 2050 (The Commonwealth Treasury, 2010). While records of household composition, show the numbers of people living in dwellings have declined from an average of 4.5 people in 1911 to 2.6 people in 2006, adding to the demand as they continue to decline, with 2.3 people projected by 2026 (Gorman-Murray and Dowling, 2011).

Planning authorities in Australia are following global views of urban sprawl, recognising that continued expansion at the current rate is unsustainable. This is reflected in all the major cities (Adelaide, Sydney, Brisbane, Melbourne, and Perth), where new planning schemes have been released in the last decade, promoting urban consolidation as a sustainable means of growth to cater for increasing housing demands (IA, 2010). The significant challenge now faced by Australian cities is sensitively handling the reshaping of built up areas, to meet the growing demand for housing with a sustainable urban form. Developing in existing built up areas entails added complexities for planning and development (Randolph, 2006), due to the impacts on the existing communities (Bunker and Searle, 2009). In Australia there has been limited experience and collective knowledge of its success (Foster, 2006), limiting the ability of campaigns to encourage its implementation. The development approval process has become complicated due to raising sustainability concerns, hindering the ability to process development applications without time and cost overruns (Ruming, 2009). Ambiguity between different jurisdictions, as well as local, state, and national governments exist due to contradicting requirements of 'sustainable urban development' (London and Cadman, 2009), complicating and adding risk to development applications. On top of this planning authorities have increased participatory planning process, aimed at improving democratic and transparent planning processes, allowing proponents of development proposals to be challenged.

Through the implementation of planning schemes introduced in the last decade, it is envisioned in 20 – 30 years time, if the plans come in to fruition, the major cities will be characterized by limited urban expansion, a strong multi-nuclear structure with high density housing around centres and transport corridors, and infill and densification throughout the current inner and middle suburbs. Residents will live closer to work, and will inhibit smaller, more energy efficient and water efficient houses. And the percentage of trips using public transport, walking or cycling will have doubled (Foster, 2006). However, these plans seem to be slow in implementing their visions and becoming reality, particularly in Melbourne (Woodcock *et al.*, 2009). The Melbourne 2030 metropolitan strategy has seen many challenges hindering its implementation. From inception in 2002 the growth was planned to be managed by a twin strategy; an urban growth boundary (UGB) and designated growth areas to place greater controls on outwards expansion at the urban fringe, while an activity centre policy aims to capture more residents and jobs in strategic locations within the established urban area (DoI, 2002). So far the activity centres are failing to provide the required amount of housing to meet demands, and consequently the urban fringe has been expanded three times since the inception of Melbourne 2030 in order to maintain growth and maintain housing affordability.

The current pressures on Australian cities to grow sustainably demands a study into the complexities of its implementation for it to be successful. The shift to an unfamiliar urban form for Australian cities requires further study into the complexities that current schemes are facing when attempting implementation. The success of urban consolidation in Australia also requires the current demand of housing to be met. Therefore a study into the efficiency of the current development application process is also required. The ambiguity between jurisdictions, as well as local, state, and national governments, on the requirements of new sustainable urban development, is currently causing confusion between stake holders, resulting in time and cost overruns, and delays in the output of higher density development. As a

result, a research project is designed to investigate these concerns. This paper reports on the critical review of precedent studies, which is part of the research project, to provide a clear and comprehensive understanding of the current industry. This involves the following key areas:

- The pressures promoting a shift in urban development towards consolidation
- The lack of community acceptance of intensified development
- Factors contributing to the inefficiency of planning application processes.
- The available and proposed methods of improving community acceptance of consolidation planning schemes and developments in Australian cities.
- The available and proposed methods for improving planning application efficiency.

2. Catalysts of Change in Urban Development

2.1 Sustainability

Sustainability is one of the most contested ideologies of our time because everyone acknowledges that it must occur but no one can agree on what needs to change in response (Arman *et al.*, 2009). In 1982 The World Commission on Environment and Development was initiated by the General Assembly of the United Nations. It was chaired by then–Prime Minister of Norway Gro Harlem Brundtland, thus earning the name the "Brundtland Commission." Its roots stem back to the 1972 Stockholm Conference on the human environment – where the conflicts between environment and development were first acknowledged – and in the 1980 World Conservation of Nature, which argued for conservation as a means to assist development and utilization of species, ecosystems and resources (Arman *et al.*, 2009). The report was followed by major international meetings. The United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 (the so-called "Earth Summit") issued a declaration of principles, a detailed Agenda 21 of desired actions, international agreements on climate change and biodiversity, and a statement of principles on forests (Arman *et al.*, 2009). Ten years later, in 2002, at the World Summit on Sustainable Development in Johannesburg, South Africa, the commitment to sustainable development was reaffirmed. In the interim, sustainable development as a concept, as a goal, and as a movement spread rapidly and is now central to the mission of countless international organizations, national institutions, corporate enterprises, "sustainable cities," and locales.

2.2 Rising Demand for Housing

The rise in housing demands are being caused by two factors that are described below; population growth and changing housing compositions, now reaching new heights, and prompting the urgency to implement a sustainable method of growth to maintain living standards in metropolitan areas.

2.2.1 Population Growth

Factors contributing to population growth are recently highlighted by Infrastructure Australia (2010), which include:

- Just over three-quarters of all Australians live in 17 major cities with populations over 100,000 at the 2006 Census.
- The majority of urban Australians live in the five largest cities of Sydney, Melbourne, Brisbane, Perth and Adelaide.
- Australia's population is projected to reach more than 35 million people by around midcentury according to both ABS and Treasury projections. Most of this growth (72 per cent) will be in the capital cities.
- Treasury projections in the 2010 Intergenerational Report estimate that there will be 8.1 million people aged over 65 years by 2050, representing 23 per cent of the population compared to 2.6 million people or 13.3 per cent in 2006.

2.2.2 Population Distribution

Australia's population is highly concentrated in urban centres. Nearly two-thirds (63.9 per cent) or 13,687,640 people were living in the capital cities in June 2008. The majority of Australian people live in large cities of 1 million or more people. The five largest capital cities of Sydney, Melbourne, Brisbane, Perth and Adelaide, each with over 1 million people, account for 60.8 per cent of the total Australian population. The Australian cities have been shaped by the idea of home that has long influenced the Australian psyche, particularly through the cultural philosophy of the Great Australian Dream (Gorman-Murray and Dowling, 2011). This dream consisted of a detached house and a backyard, an ideology that takes up a lot of space, and leads to the spreading of our urban fabric. This is exemplified in Melbourne, where the boundaries of the metropolitan area now span approximately one hundred kilometres from side to side. This dream is changing. The households are altering, pressures on land availability are increasing the supply of apartments and other medium-density dwellings, and younger more culturally diverse generations are more resistant to, or cannot afford the dream. In assessing the appropriate form of housing for the future it is important that characteristics of the modern home are explored.

Over the twentieth century household patterns have changed considerably (The Commonwealth Treasury, 2010). Households dropped from an average of 4.5 persons in 1911 to 2.6 persons in 2006, and continue to decline, with 2.3 persons projected by 2026 (IA, 2010). Fewer Australians are living in traditional nuclear families; more are living alone with other non-related adults, and more couples without children are expected, especially empty nesters (Gorman-Murray and Dowling, 2011). These shifting demographics complicate homemaking practices and meaning of home formally associated with the nuclear family, the dominant household type during the twentieth century. Growth in single occupancy households has been the fastest. The share of lone person households increased from 15.7% in 1967 to 24.4% in 2006, and is tipped to reach 30.2% by 2026 (3.1 million households). Traditional nuclear families – heterosexual couples with children – are projected to remain a significant for of living for many Australians. Most of these families will continue to live in detached houses, which are getting larger. The average size of new houses in Australia grew from 162 square metres in 1985 to 239 square metres in 2006 (Gorman-Murray and Dowling, 2011).

2.3 Unsustainable Urban Sprawl

Because of the increasing demand for housing in Australian cities resulting from the factors outlined above; growing population and changing housing compositions, the need for a sustainable form of urban development to cater for growth is paramount. The current form growth through Greenfield developments at the periphery of cities is referred to as urban sprawl and is considered to be unsustainable for the following reasons:

- relative lack of amenity and access to jobs and services, as reflected in house price gradients (Buxton and Tieman, 2005)
- vulnerability to increased cost of petrol (Dodson and Sipe, 2008);
- loss of valuable agricultural industries;
- loss of biodiversity from the green wedges and non-urban areas protected by growth boundaries (Bunker and Searle, 2009)
- increasing social segregation according to measures of human capital (ABS, 2008);
- substantial cost savings associated with urban redevelopment compared to greenfield development (Trubka *et al*., 2008).

2.4 Metropolitan Planning Schemes

Planning authorities in Australia are following global views of urban sprawl, recognising that continued expansion at the current rate is unsustainable (for a description of events; (Buxton and Tieman, 2005)). This is reflected in all the major cities (Adelaide, Sydney, Brisbane, Melbourne, and Perth), where new planning schemes have been released in the last decade, promoting urban consolidation as a sustainable means of growth to cater for increasing housing demands. This is prompting pressure for developments to occur within the urban boundary which is proving hard to implement. Below the history of consolidation in Melbourne analysed as its metropolitan plan is similar to all the major cities as it nominates activity nodes for development. It is also one of three of the major cities (Melbourne, Adelaide and Perth) to nominate an Urban Growth Boundary (UGB).

3. Consolidation in Melbourne

3.1 Melbourne 2030

Melbourne 2030 established an Urban Growth Boundary (UGB) which, by its very nature suggests, limits the amount of land available to be zoned for development on the urban fringe. This implies more pressure on the existing established suburbia, the very outcome prompting the SOS protest movement. But Melbourne 2030 manages to avoid this outcome by requiring that some 40 percent of the projected growth in the dwelling stock by 2030 be medium to high density dwellings located in activity centres or in designated precincts like Docklands. The implication is that the capacity of activity centres to absorb a high proportion of population's growth over the next 30 years will take the pressure off redevelopment within the existing suburbia. The goal of urban consolidation will be achieved, but not at the expense of Melbourne's suburban ambiance (Birrell *et al.*, 2005). An added advantage of Melbourne 2030, particularity associated with the new higher density activity centre projects, are the contemporary new planning ideals discussed earlier. These ideals include incorporating a communitarian urban village atmosphere in which residents will live, work and shop together. It is agreed by most planners that 2030 was success at the ideological level (Birrell *et al.*, 2005). Its vision was praised because it had particular objectives that purports to result in a cheaper and more efficient, less resource intensive urban form.

3.2 Melbourne 2030 Implementation Issues

From inception in 2002 the growth of Australian cities was planned to be managed by a twin strategy; an urban growth boundary (UGB) and designated growth areas to place greater controls on outwards expansion at the urban fringe, while an activity centre policy aims to capture more residents and jobs in strategic locations within the established urban area (DoI, 2002). So far the activity centres are failing to provide the required amount of housing to meet demands, and consequently the urban fringe has been expanded three times since the inception of Melbourne 2030 in order to maintain growth and maintain housing affordability. The merits of urban consolidation have been debated extensively over the past decade (Buxton and Tieman, 2005). Academic opponents, notably Troy (Troy, 1996), have queried both the desirability of consolidation and the feasibility of bringing about significant reductions in the rate of suburban expansion, while urban activist groups, led by the Melbourne organization *Save Our Suburbs*, have opposed its impact on existing suburbia, and housing industry leaders blame consolidation policies for rising house prices (Birrell *et al.*, 2005).

The Melbourne, Adelaide and Perth plans incorporate formal urban growth boundaries that set limits to further development at the urban fringe, and all the plans envisage that new housing developments on the fringe will make up less than half the needed net growth in dwelling numbers. For example, the *Melbourne 2030* plan, anticipates that, of the 620 000 additional dwellings that will be needed by 2030, only 31% will be in new greenfield developments (DoI, 2002). Of the remainder, 28% will be housed in infill developments within existing suburbs and 41% are expected to live in medium and high density 'strategic redevelopment areas' associated with major activity centres and containing affordable housing. 'A significant proportion of new development … must be affordable for households on low to moderate

incomes ...' (DoI, 2002, p.107). The concept of activity centres builds on planning ideas dating back 50 years, particularly in Sydney and Melbourne. It involves encouraging the development of a multi-nuclear metropolitan structure with suburban retail and office employment concentrated into a limited number of major nodes, at locations well served by public transport. These nodes are then intended to serve as foci for high and medium density housing. Urban containment and consolidation, as noted earlier, have been promoted by State governments since the 1980s. Initially the main rationale was economic efficiency: avoiding expenditure on new infrastructure and reducing transport costs. But, during the last ten years consolidation has been seen increasingly as the key to more environmentally sustainable cities, through producing high densities more favourable to public transport than the private car, through developing smaller dwellings and blocks that use less water and power and through reducing the impact of urban expansion on surrounding ecosystems (Bunker and Searle, 2009).

4. Residential Communities

A strong residential community resentment of consolidation exists in Melbourne stemming back to the formation of the Save Our Suburbs (SOS) in the Kennet area (Birrell *et al.*, 2005). Fear of infill development reducing the living standards of Melbourne's iconic suburbia is proving to be a major barrier for the implementation of Melbourne 2030 and the efficiency of the planning approval of the planning process.

4.1 Visualisations for Conceiving

In the case of Melbourne 2030, a primary sphere of concern in communities is the changing physical form of the city at a range of scales. Comprehending the complexities of such morphological issues requires far more than words, yet images are not often given much prominence in such processes. In the absence of realistically simulated vision, community perceptions of higher densities are prejudiced by the precedents of the recent pasts – often poorly designed over scaled and un-integrated (Woodcock *et al.*, 2009). These factors were what fuelled the residential 'backlash' explained above in the 'Kennet Government'. The paradox is that urban design issues, particularly the fear of high-density development, play a key role without any realistic urban design vision being put forth by the State or development industry. Residential concerns are primarily focused on the character of urban places, their look and feel, and the way they work in both social and functional terms. While the Melbourne 2030 policy documents contain many words and images that gesture towards the affective dimensions of place, they do not inform debate about the local streetscape outcomes. Indeed, the state government has been keen to remain at a distance and leave detailed structure planning (and any political difficulties) to local government.

4.2 Approving Developments in a Sustainable Era
4.2.1 Current Environment

For the successful implementation of sustainable urban development policies, effective coordination of policy action at all levels of government, including regional, state and federal, is required. Errors in planning instruments are often identified and never seem to be resolved (London and Cadman, 2009). Coordination mechanisms between layers of government are often weak or non-existent and consistency between state and local development plans is typically lacking. Some form of regional governance and coordination is needed to transcend local boundaries and serve as a bridge between local communites and state government. The impacts of the increasingly conflictual environment have been widely reported and include increased uncertainties, lengthy protracted community consultative planning processes, Political and financial risks, corruption, divided communities, excessive time delays and associated holding costs, increased regulation compliance costs, a litigious environment and increased cost of consultant reporting (PCA, 2006).

4.2.2 Planning Reforms

In Australia, the conflict between local and state governments, and from one jurisdiction to another, is of significant concern for the development industry and presents challenges for design managers. For development compliance there is a complex and fragmented system of numerous planning instruments including state Acts and state and local planning controls; on a project there can be more than 20 different planning instruments that require detailed knowledge and attention. The variances alone between states and between local jurisdictions has resulted in an increasingly complex and disharmonized system which has a significant impact upon a market of suppliers who increasingly work across jurisdictions; without the added frustration of conflicts within the 'set' of instruments related directly to a project (London and Cadman, 2009).

4.2.3 Collaborative Planning Process

The past two decades have seen the rise of a highly participatory planning process. Initially aimed at improving democratic and transparent planning processes, it appears that other problems have beset this environment. There is an ever-increasing desire to challenge the claims made by proponents of development proposals in relation to sustainability by various local community groups. Consultative processes have increased in the past decade and to achieve timely development approvals, many involved in the process are required to persuade community stakeholders and various planning authorities about the extent that the proposal achieves sustainability across economic, social and environmental objectives (London and Cadman, 2009). It is suspected that the increased demand to solve and mediate disparate views on sustainability has emerged as one of the most significant issues for design managers today. The skills required to meet social, economic and environmental objectives of the various planning instruments and to present professional and scientific arguments to support design solutions is perhaps one of the most challenging aspects of design management for the 21st century.

5. Conclusion and Recommendation

It has become clear that current difficulties implementing urban consolidation and the negative connotations of residential communities is multifaceted, involving a number of different yet interdependent volatile factors. Conditions and practices applied through state planning, local governments and the application process are considered equally critical to the implementation of metropolitan urban planning schemes and the sustainable future of Australian cities. A strong resistance of residents to embrace consolidation, and the nature of participatory planning processes is remaining to be one of the main barriers of implementation of Sustainable urban plans such as Melbourne 2030. Currently conflicting legislation between jurisdictions and local and state government has created a conflictual planning application process. Additional areas for future research and policy development have been identified in the study. In some cases these were identified as priorities by focus group or case study participants, others have arisen through the analysis of the present data. As discussed above, there is a need for more research on strategies for achieving urban consolidation objectives through the support of community residents. The future research areas of knowledge needed to encourage community support include the aid of visual representation to metropolitan planning schemes, the efficiency of the development application processes, and the role of local government being strengthened to represent local community needs, while also implementing base requirements for new developments.

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