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Word count: 4,884 (not including the reference list)

Key words: sustainability; urban social sustainability; physical structure; social structure.

Abstract

Despite the onset of an economic recession Australia's cities continue to grow, presenting challenges to urban and regional planners who must consider how best to redevelop outdated urban infrastructure and establish new infrastructure to meet the needs of increasing urban populations. The degree to which policy makers and planners can steer new and existing developments towards sustainability is affected by how decision makers understand sustainability. This paper discusses the social dimensions of urban sustainability and measurement issues. It draws on work in progress on a broader project to develop a model to assess triple bottom line sustainability in urban infrastructure development. It is argued that the concept of social sustainability has categories that are synergetic but there also inherent tensions. The form of the built environment affects the opportunities available for social relationships to form but this perspective seems to not fully address how humans might interact in complex ways with social structures with implications for understanding social sustainability.

This paper discusses work in progress on one dimension of a multi-faceted study of planning for urban sustainability underway at the University of South Australia. The concept of social sustainability is addressed in relation to a critical review of the literature on planning for sustainability. It will be suggested that the degree to which policy makers and planners can steer new and existing developments towards sustainability is affected by how social scientists, policy makers and planners understand sustainability. For example if the objective of the sustainability is on ensuring economic growth, then social and environmental objectives will only be implemented if these objectives do not hinder growth. Alternatively if the boundary of ecological limits is implemented, then economic and social decision making will be confined by these boundaries if a development imposes unduly on the environment. In the literature on urban planning social sustainability is often associated with scholars who favour, new urbanist and transit oriented developments that might produce compact, walkable cities designed around transit nodes. It will be argued here that the form of the built environment affects the opportunities available for social relationships to form but this perspective seems to not fully address how humans might interact in complex ways with social structures with implications for understanding social sustainability. In this sense social sustainability and how it is understood proceeds from how it is defined.

Defining social sustainability

It is generally agreed in the general literature in this field that the main dimensions of sustainability are the economy, the environment, and society, and that they are related to each other in some manner (Macintosh & Wilkinson 2006, p. 3; Gibson 2005, p.

94; Luckman 2006, p. 261; Spangenberg, Pfahl, & Dellar 2002, p. 66; Bossel 1999, p. 13; Farrell & Hart 1998, p. 2; Maclaren cited in Hoernig & Seasons 2004, p. 87).

Social sustainability is broadly defined by Chiu (2003, p. 245) as 'maintenance and improvement of well-being of current and future generations'. Others, such as King (2008) and Littig and Griessler (2005) suggest social sustainability means the satisfaction of basic human needs, the continual reproduction of humans and the subsequent continuation of culture. As will be demonstrated these definitions are limited in capturing the complexities of social sustainability. Social sustainability might extend further than the consideration of basic needs, culture, well-being and the reproduction of humanity.

In this sense McKenzie (2004: 120) defines social sustainability as 'a life-enhancing condition within communities, and a process within communities that can achieve that condition'. According to McKenzie the condition incorporates equity of access to key services (including health, education, transport, housing and recreation), as well as equity between generations, meaning that future generations will not be disadvantaged by the activities of the current generation. In this understanding social sustainability is a system of cultural relations in which the positive aspects of disparate cultures are valued and promoted and there is widespread political participation of citizens not only in electoral procedures buy also in other areas of political activity, particularly at a local level.

Hence McKenzie (2004) argues that social sustainability is about accessibility; inter-generational equity and continuation of culture. Chiu (2003) likewise suggests that

social sustainability relates to social norms and conditions in that any environmental or economic decision must not exceed the community's tolerance for change. It follows, then, that social sustainability has synergies with social acceptability. Chiu (2003, p.66-67) argues that social sustainability is regularly interpreted from three perspectives; the *development-oriented* interpretation emphasises social acceptability, in noting that development is socially sustainable when it keeps to social relations, customs, structures and values. The *environment-oriented* perspective suggests that development is sustainable when it meets social conditions, norms and preferences required for people to support ecologically sustainable actions regarding resource distribution and intergenerational equality. Finally, the *people-oriented* interpretation of social sustainability emphasises maintaining levels of social cohesion and preventing social polarisation and exclusion.

The concept of urban social sustainability is also associated with the pursuit and realisation of social equity, social inclusion and social capital (Bramely and Power 2009). Bramely and Power (2009) argue that 'the underlying premise to all of these concepts (social exclusion, social inclusion and social capital) is that individuals within society need to work together and interact in order for societies to be socially sustained' (p. 32). Social networks are identified as the common thread between these concepts. Social networks are understood to bring people together, imbue a common sense of purpose and provide access to work and other social benefits. Bramley, and Power (2009) propose a conceptual framework for urban social sustainability. It incorporates two over-arching typologies: social equity; and sustainability of communities. The latter refers to social interaction through social networks in the community and pride, sense of place; safety and security. The

sustainability of the community is defined as 'the ability of society itself, or its manifestation as local community, to sustain and reproduce itself at an acceptable level of functioning' (p. 421). Bramely & Power (2009) argue that these typologies of social sustainability are reflective of two recognisable, overarching concepts situated within the literature. Social equity issues are described as 'powerful political and policy concerns, and centre upon a distributive notion of social justice. Issues of sustaining the community are seen as more nebulous. Social capital and cohesion are contested concepts, 'in terms of their value loadings and also in terms of how important these phenomena are for the achievement of wider social goals, but there is quite wide agreement that at least some aspects are potentially important' (Bramely & Power 2009, p. 33). However, it is difficult to understand why equity is segregated from other key attributes of 'sustainability of community'. Bramely and Power (2009) appear to be offering a functionalist understanding of social sustainability as a process of social cohesion. This model positions the achievement of social sustainability as being about attaining harmony and eliminating discord. This position has synergies with the Brundtland 'we can have it all' definition that underplays social, environmental and economic tensions in processes associated with sustainability.

In contrast Meadowcroft (1999, p. 14-15) offers a radical definition of social sustainability:

> (A) society that has learned to live within the boundaries by ecological limits. Society as a collective and ongoing entity can be sustained, because social practices which imposed excessive burdens upon the environment have been reformed or abolished.

In this definition, tensions between economic growth and the environment are addressed. A healthy environment can only be obtained by reforming social practices that threaten the environment.

Likewise McGregor (2003) argues that 'without the planet's basic life support there can be no society and no economy, so the social system therefore is contained within the ecological system' (p. 30). To view each objective and its values separately is to ignore the fact that the environment is central to life itself, as Stilwell (2002, p. 15) indicates. McKenzie (2004) argues that indicators of social sustainability should include equality of access to key services (including housing), intergenerational equality, public participation in civic and political activities, particularly at a local level and a sense of community ownership. Likewise Chan and Lee (2008) suggest that the provision of social infrastructure and the availability of job opportunities have an association with accessibility and the ability to fulfil psychological needs. These scholars also refer to townscape design and the preservation of local characteristics as associated with social sustainability. Chan and Lee (2008) appear to be making a link between built form and social outcomes in reference to the degree to which the amenity of the urban form encourages social interaction. Meadowcroft (1999), McGregor 2003), McKenzie (2004) and Chan and Lee (2008), address in different ways relationships between agency and structure and consider inherent tensions between economic growth, social justice and environmental sustainability. Chun and Lee (2008) add an interesting dimension to this debate by drawing attention to the relationship between agency and physical structure.

Townscape design considers the uniqueness of a place and a sense of belonging among the residents (Chan and Lee 2008; Thwarts et al 2007). Urban design in this sense has a fundamental role in linking people and places together. If the city is fragmented and unstructured, it contributes to social segregation and alienation. Oktay (2004, p.30) argues in this sense that for a 'truly sustainable environment, we need to maximise the exchange whilst minimising the travel to do it'. Similarly, Chan and Lee (2008) discuss the significant indicators of urban social sustainability as including townscape design, accessibility and the preservation of local characteristics. These key indicators appear entrenched in the social dimension of sustainability. Similarly Porta & Renne (2005) address townscape design in relation to urban fabric indicators. These indicators address the link between the quantification of the formal components of urban design to determine the impact upon the level of sustainability. This tool allows for the design of streets and neighbourhoods to be measured and compared in relation to factors such as land use diversity; natural surveillance (fronts and backs); permeability/street connectivity; employment density, and number of buildings and number of lots.

Similar perspectives have been forwarded by the new urbanist architects Duany, Plater-Zyberk & Speck (2001), Calthorpe & Fulton (2001) and Katz et al (1993. The new urbanists favour compact traditional neighbourhoods, mixed use, walkable cities with common greens and squares, and transit oriented developments. The objective is to create a traditional village ambience similar to pre-world war two developments that were not oriented around car use. Gillham (2002) suggests that there are few examples of new urbanist developments that have successfully achieved the goal of restricting car use. However Gillham (2002) notes that planners and urban

designers tend to be constrained by the demands of developers, banks and local regulations that conflict with new urbanist design principles. Nevertheless Gillham (2002) points to a range of new urbanist, transit oriented developments in the USA and the UK that have, with varying degrees of success, attempted to develop mixed use neighbourhoods that link communities with social infrastructure that fulfil social needs.

To fulfil basic social needs public facilities such as schools and hospitals are required (Rothenberg cited in Chan and Lee 2008). Municipal services (ie public utilities, mass transport, telecommunication) are also of vital importance for the sustainability of modern cities (Enyedi 2002, p. 143). Open spaces and green areas likewise provide places for social gathering, public interaction, and buffer zones in crowded areas (Chiu 2003; Corbett & Corbett 2000; Cuthbert & Dimitriou cited in Chan and Lee 2008). In this vein employment is also considered to be a critical component of social sustainability (Omann & Spangenberg cited in Chan and Lee 2008; Enyedi 2002). Employment provides income to maintain individual and social well being. Moreover the workplace offers a place for social contact and interaction that inturn improves the social well-being of the citizens (Chan and Lee 2008).

Indeed, job opportunities tend to correlate highly with educational attainment. Social sustainability in this sense is linked to debates over whether educational attainment in a given community will provide suitable job opportunities at income levels that are sufficient to sustain individuals and communities (Davidson 2009).

The proximity from place of residence to work, opportunities for participation in leisure and cultural activities, are also linked to this debate (Chan and Lee 2008; Thwaites et al 2007). In this sense, the organisation of the urban transport system is

critical. Urban transport systems directly affect population access to workplaces, public institutions and cultural, educational and medical facilities. Transport policy can significantly address social exclusion and affect social sustainability (Enyedi 2002).

Moreover closer proximity of the place of living to work and social venues might have environmental benefits in the form of reduced carbon emissions from vehicles and other forms of transport (Oktay 2004, p. 30). Reduced emissions contribute to improving air quality and the capacity to walk or ride a bicycle to work contributes to health and well being Oktay (2004, p. 32). In this sense, busy streets full of cars affect the community by dividing neighbourhoods. Heavy traffic can be intensified by badly maintained streets, which contribute to unpredictable patterns of movement, present dangers for children and affect the quality of neighbourhood interaction. Oktay (2004) suggests that people who live on streets with heavy traffic are less likely to know their neighbours. In contrast pedestrian-oriented communities are held to contribute to social sustainability by placing 'urban environments back on a scale for sustainability of resources, both natural and economic, and lead to more social interaction, physical fitness, diminished crime and other social problems' (Oktay 2004, p. 32).

Such matters have an impact on the psychological well being of communities Ooi (2005, pp. 66 - 75) argues for urban social sustainability indicators for cities derived from psychological and behavioural trends, education levels, living conditions, social equity and income distribution. Ooi's model also considers elements of the environment-health relationship and economic development. Psychological well

being is also linked in this discourse to feelings of neighbourhood security. Security and residents involvement in the urban design process are considered to contribute to social sustainability (Chan and Lee 2008). Hence, good urban governance practices should develop cooperation between local government and grass-root communities subject to the characteristics of varying local issues (Enyedi 2002). Access to green space also enhances the psychological well-being of communities. Green spaces enhance 'human activity, climate amelioration and ecological diversity, without separating and isolating people from each other, which is necessary for human interaction and community development' (Oktay 2004, p. 33).

Indeed, some studies suggest that maintaining urban heritage buildings and environments contributes to the well-being and enjoyment of future generations (Feng 2004). The maintenance of heritage buildings provides indications of changes over time and the imprint on the urban fabric left by former generations. Such processes are held to help populations to identify who they are and 'what we do and how we lived in the past' (Chan and Lee 2008, p. 247). Oktay (2004, p. 32) suggests that a city can be evaluated by its public space and whether such space reflects public life, civic culture and everyday discourse. The availability and utilisation of public space is held to promote social cohesion and urban sustainability.

Public space also facilitates social networks and the generation of social capital (Bramley and Power 2009). In this literature, the possession of social capital is held to be an indication of the degree to which individuals have a vested interest in a given community (Wilson 2006, Wilson and Mayer 2006). Such processes are associated with social norms, values, and culture, with sense of belonging to a place and with

feelings of safety and trust. The common conceptual premise of the literature on social capital is that interpersonal networks have value in terms of their capacity to socially sustain individuals and in some cases provide bridging networks that can allow network members to change their social status by virtue of the advantages that accrue to having connections with significant others. Social networks can provide members with information on employment, health or education or connect them with employers, doctors, lawyers, politicians or influential others who might provide assistance in various ways. within a society need to work together and interact in order for a society to be socially `sustained'. Social capital requires a physical medium, which might be a workplace or a sporting facility, a park or a backyard for a family barbeque.

In this sense built environments require management from an intergenerational perspective. Meadowcroft (1999) argues that non-renewable resources, population levels, the preservation of key aspects of life support systems, and material throughput must be considered. These attributes broadly fall under the precautionary principle. From the perspective of the built environment this refers to managing resources for the future. That is, considering options which limit impact on the environment, while also considering the inter-relationship with the quality of life for current and future generations.

Population growth affects all of the above processes. Growing populations place pressures on finite resources. In this sense, bioenvironmentalists argue for the creation of a new economy based on limits to growth, as well as limits to population growth and a reduction in consumption levels. This perspective holds that it is important to

internalise the value of nonhuman life and to develop collective coercion to control greed, exploitation, and reproduction (Clapp & Dauvergne 2005).

Tensions in the debate

Whilst the themes discussed above suggest a benign relationship between more compact urban forms, higher urban population density and social sustainability there are also evident tensions in these arguments. New urbanists such as Duany, Plater-Zyberk & Speck (2001), Calthorpe & Fulton (2001) and Katz et al (1993. argue for compact cities and higher densities to create smaller ecological footprints as a solution to urban sprawl. In contrast, a study Bramely and Power (2009) is seemingly in tension with these arguments. Their study found dissatisfaction with local neighbourhoods and social problems were associated with higher density areas. Bramely and Power (2009) also noted that higher density was associated with higher incidences of poverty. Conversely parking adequacy and higher numbers of cars per dwelling were associated with reduced neighbourhood problems.   On the other hand compact urban forms and higher population densities were also associated with better access to services. Such factors suggest both benign and tense relationships between aspects of social inclusion and social sustainability.

Studies by Skaburksis (2006) and Howley et al. (2009) found that people (predominately young and single individuals) chose to live in higher density dwellings if it was an affordable option but many saw it as a transition stage and planned to move to lower density when they could afford it. Howley et al.'s (2009) study was of residents who had made a choice to live in a new, relatively compact residential environment in the central area of Dublin. The preference of the majority

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of these residents was to relocate from their compact environment to lower-density locations. Residents expressed a preference for access to more space, a cleaner environment, less noise and better services and facilities for children. For Howley et al.'s (2009) subjects, high density developments were in tension with the liveability of neighbourhoods.

Forster (2006) notes that urban planners have long argued that there should be a demand for higher density housing in Australia. The size of the average Australian household fell from 3.8 persons in 1947 to 2.6 in 2001 (Hugo, 2005). It seems sensible from a planning perspective that people in smaller households would prefer to live in apartments in locations accessible to shops and transport rather than in the traditional detached, suburban bungalow (Forster 2006). But apartment dwellings in Australia tend to remain largely the abode of young adults, overseas students and temporary migrants (Hugo 2005, Vipond et al. 1998). Almost all other demographic groups continue to show an evident preference for low density housing (Skaburksis 2006, Troy 2000, Yates 2001).

Forster (2006) also suggests that there is a class dimension to current planning policies in Australia that seek to produce higher densities in Australian cities through the imposition of urban growth boundaries and changes to development assessment plans to encourage higher densities. Current policies will force the working class into apartments whilst the middle and upper classes can continue to enjoy low density living, according to Forster (2006). Such processes raise issues with equity and fairness. Gleeson (2008) refers to a conflict between 'black robed' planners who wish to compel people to live in compact cities, and 'Australian dreamers' who are

opposed to planning restrictions on traditional suburban developments. 'Black robes' tend to favour the development of transit oriented developments, mixed use, higher density housing associated with shops, work and transit nodes. As Forster (2006) notes, such compact, self contained developments rarely accord with the real world needs and wants of Australians. Indeed, there appears to be only thin empirical evidence that more compact forms of urban development have an association with reduced travel by car and more travel by public transport. A review of the literature in this field finds many papers that offer strategic advice on 'how to make TODS work' but few papers that offer empirical studies of a relationship between compact urban design and transit usage. One study in this area by Ewing and Cervero (2001) found that compact built environments did influence transport mode choice. However socioeconomic characteristics were also predictors of the choice of transport, perhaps more so than characteristics of the built environment. Handy (2005) likewise concluded that new urbanist land use and design strategies reduced automobile use to a small amount where such strategies addressed an unmet demand for driving less. A study by Renne (2005) of thirty years of TOD developments in the USA based on census and survey data made the claim that 'Over the past thirty years, transit commuting has increased amongst TOD residents by 11 percent while it has decreased across regions by 63 percent'. A closer examination of Renne's study reveals that areas considered to be TODS were subjectively defined by survey respondents and limited by Renne to housing near train stations. The claim of an 11 percent increase in transit use by TOD residents appears to be the proportion of residents in subjectively defined TODS who were using public transit in 2000 in comparison with transit users in 1970. Renne (2005; p. 7) states 'the share of commuters using transit has increased from 15.1 percent in 1970 to 16.7 percent in

2000, representing a growth rate of 11 percent'. However the proportion of all residents of Renne's TODS using transit seems to have only increased by 1.6% in thirty years, which suggests transit usage in these areas is at best static.

Likewise Dutch studies by Verheij et al. (2008) and Groenewegen et al. (2006) found that urban green spaces in European cities are under strong pressure due to increasing urbanization. When this process is combined with a spatial planning policy of densification the outcome is fewer people living in green residential environments. Such processes have a greater proportionate impact on people with low socio-economic status, who have fewer resources to move to greener areas outside the cities. In this sense the development of compact, denser cities might also have differential class impacts. Conversely Groenewegen et al. (2006) note that green open spaces in urban settings whilst having health benefits for those that can access them are also associated with public insecurity, that is, the fear of crime in public parks and open spaces.

Moreover the social capital that might be fostered by more compact, higher density urban communities is not always benign. Putnam et al.'s (1993) analysis of social capital in Italy, for example, refers to the mafia as the 'dark side' of social capital. In Putnam et al's thesis criminal networks like the mafia work against broader community-based social sustainability by undermining social trust and local economies by the fixing of contracts and the corruption of political processes. Mafia criminal activity is associated with higher density cities like Naples, the home of the Camorra. Naples underwent urban renewal programs in the 1990s. Central areas like the Piazza del Plebiscito were cleared of cars to make pedestrian areas, which were

meant to reduce crime and social problems. But a recent report by Owen (2006)

suggests that the inner city remains in the grip of criminal syndicates that perpetrate

daily murders and muggings despite urban renewal. In essence changes to the built

form appear to have had little impact on underlying social issues in Naples. Moreover

urban redevelopment of downtown areas that succeed in creating compact, 'vibrant'

neighbourhoods from formerly disadvantaged neighbourhoods sometimes fail to

address broader questions of urban sustainability as Levine's (2000) study of

Baltimore's Inner Harbor redevelopment suggests. Levine (2000) notes that within

blocks of Baltimore's renewed Inner Harbor are similar, compact, higher density

neighbourhoods marked by social exclusion, poverty, high rates of crime, drug abuse

and dilapidated housing. Such studies raise questions about the sustainability of

higher density, transit oriented developments in Australia marketed at middle class

investors but often located on low cost, former industrial land in working class

districts. A case in point is the Newport Quays development in Port Adelaide, South

Australia. Newport Quays is a $2 Billion marina development on the Port River

adjacent to a train station and consisting of 442 apartments and associated villas.

Units in the development initially marketed at $670,000 are currently selling for

around $300,000. The complex is surrounded by relatively affordable, low density

housing. The Port Adelaide Enfield Council estimated in 2008 that only about a third

of apartments and about half of the villas were regularly occupied a year after

residents first moved in (that is, over 300 apartments were not regularly occupied in

the complex) (Portside Messenger 23rd July 2008). Locals have described the

development as a 'ghost town' with not many lights on at night and very few wheelie

bins left out for collection on garbage day. A major South Australian company

involved in the Newport Quays project in Port Adelaide was placed in receivership in

March 2009, with debts of more than $8 million and is currently being sued by investors in the project (The Australian, 7th March 2009). Such developments suggest that building transport oriented developments without reference to consumer preferences, needs and wants might produce neither profitable developments, nor socially sustainable communities.

Conclusion

The concept of social sustainability in the literature on urban planning has an association with scholars who favour compact, transit oriented developments that might produce more environmentally sustainable, walkable cities designed around transit nodes. Such cities might link residents with education, employment and health services through collocation with such services without necessarily requiring the use of a car. Developments of this nature might make cities more sustainable by reducing ecological footprints, improving employment and health outcomes and reducing urban sprawl. In essence such scholars are addressing the relationship between human agency and physical structure.

Whilst there is little doubt that the shape of the built environment affects the opportunities available for social relationships to form, this perspective seems to not fully address how human agency might interact in complex ways with other structures such as the dispersed nature of employment and education in modern cities, the impact of economic change on work life balance, continuing consumer preferences for privacy and personal space and a myriad of other interactions between humans and social systems that Ooi (2005), McKenzie (2004), Gleeson (2008) and other

scholars suggest have an impact on how people live their lives and where they wish to reside.

Other studies suggest that attempts by policy makers and planners to reduce urban sprawl by imposing urban growth boundaries and encouraging higher density development has differential impacts according to social class. That is, increasing densities through planning strategies that restrict the availability of land tend to force low income earners into apartments whereas the wealthy can continue to afford detached dwellings. In this sense densification can remove access to green space, which is less of an issue for wealthier residents who can afford to move to greener neighbourhoods or visit the countryside when they wish than for poorer citizens who have less options. Moreover Levine's study of Baltimore suggests that compact high density neighbourhoods can exist side by side with similar areas marked by poverty, crime and social exclusion, which suggests that the physical structure of a neighbourhood is much less salient to social sustainability than human relationships with social structures such as paid employment, economic and financial security, affordable housing, education, safety and health systems.

It has been argued here that understanding social sustainability requires consideration of the relationship between humans and the physical structure of cities but perhaps more importantly how the built form might relate to human interactions with systemic structures that affect their social, economic and environmental welfare. In this sense a focus might be placed on the relationship between agency and structure and the inherent tensions between economic growth, social equity and environmental sustainability. Our review suggests that as a society we might learn to reform or

abolish social practices that impose unsustainable burdens on the environment and hence achieve sustainability. There is clearly a role for changing the built form of cities to facilitate interactions that might forward this process but critical attention must also be paid to addressing the tense social, economic and environmental relationships that arise between human agency and social, economic and environmental structures.

References

Bossel, H. (1999). *Indicators for Sustainable Development: Theory, Method and Application*, Prepared for the Balaton Group. Retrieved 2/07/06, from http://www.iisd.org.

Bramely, G. and Power, S. (2009). Urban form and social sustainability: the role of density and housing type, *Environment and Planning B: Planning and Design*, 36, 30-48.

Calthorpe, P. and Fulton, W. (2001). *The Regional City*, Island Press.

Chan, E., & Lee, G. (2008). Critical factors for improving social sustainability of urban renewal projects, *Social Indicators Research*, 85, 243-256.

Chiu, R. (2003). Social Sustainability, sustainable development and housing development: The experience of Hong Kong. In R. Forrest & J. Lee (eds.), *Housing and social change: East-west perspectives*, Routledge.

Clapp, J., & Dauvergne, P. (2005). *Paths to a Green World*. London: The MIT Press.

Corbett, J., & Corbett, M. (2000). *Designing sustainable communities: Learning from village homes*, Canada: Island Press.

Davidson, K. (2009). Monitoring systems for sustainability. What are they measuring? Doctoral Thesis, University of Adelaide.

Duany, A., Plater-Zyberk, E and Speck, J. (2001). *Suburban Nation The Rise of Sprawl and the Decline of the American Dream*, Northpoint Press.

Elkin, T., McLaren, D., Hillman, M. (1991). *Reviving the City: Towards Sustainable Urban Development*, London: Friends of the Earth.

Ewing, R., & Cervero, R (2001). Travel and the built environment: A synthesis. *Transportation Research Record*, 1780: 87-114.

Enyedi, G. (2002). Social sustainability of large cities. *Ekistics*, 69 (412–414), 142–144

Farrell, A., & Hart, M. (1998). What does sustainability really mean? The search for useful indicators, *Environment*, 40 (9), 4-16.

Fischer T (2007). *Theory and Practice of Strategic Environmental Assessment*, London: Earthscan.

Forster, C. (2006). The Challenge of Change: Australian Cities and Urban Planning in the New Millennium, *Geographical Research*, 44(2):173–182.

George, C (2001). Sustainability appraisal for sustainable development: integrating everything from jobs to climate change, *Impact Assessment and Project Appraisal*, 19 (2), 95-106.

Gibson, R. (2005). *Sustainability assessment: criteria and process*. London: Earthscan.

Gillham, O. (2002), *The Limitless City: A Primer On The Urban Sprawl Debate*, Island Press.

Gleeson, B. (2008). Critical Commentary. Waking from the Dream: An Australian Perspective on Urban Resilience, *Urban Studies*, 45, 2653

Groenewegen, P.P., van den Berg, A., de Vries, S. and Verheij, R. (2006). 'Vitamin G: Effects of Green Space on Health, Well-being, and Social Safety', *BMC Public Health*, 6, 149.

Handy, S (2005). Smart growth and the transportation–land use connection: What does the research tell us? *International Regional Science Review*, 28 (2): 146-67.

Hoering, H., & Seasons, M. (2004). Monitoring of Indicators in local and regional planning practice concepts and issues, *Planning, Practice & Research*, 19 (1), 81-99.

Howley, P., Scott, M. & Redmond, D. (2009) 'An Examination of Residential Preferences for Less Sustainable Housing: Exploring Future Mobility among Dublin Central City Residents'. *Cities*, 26 (1):1-8.

Hugo, G (2005). Implications of demographic change for the future housing demand in Australia. *Australian Planner*, 42(2): 33-41.

Katz, P., Scully, V. and Bressi, T. (1993). The new urbanism: toward an architecture of community, McGraw-Hill Professional.

King, M. (2008). *Understanding the Social Dimension of Sustainability,* T & F Books.

Levine, M. (2000). *The Social Sustainability of Cities: Diversity and the Management of Change*, (Eds. Mario Polèse and Richard Stren), University of Toronto Press.

Littig, B. and Griessler, E. (2005). Social sustainability: a catchword between political pragmatism and social theory, *International Journal of Sustainable* Development 8 (1–2), pp. 65–79.

Luckman, P. (2006). KiwiGrow- a New Approach to Sustainable Development Reporting, *Australasian Journal of Environmental Management*, 13, 261-267.

Macintosh, A., & Wilkinson, D. (2006). *Which Direction? A review of monitoring & reporting in Australia*, prepared for The Australian Collaboration.

McGregor, I. (2003). An ecologically sustainable business sector within an ecologically sustainable society, *Ecological Economics Think Tank*, Auckland, New Zealand, November.

McKenzie, S. (2004). *Social sustainability: towards some definitions*, Hawke Research Institute working paper series; no. 27.

Meadowcroft, J. (1999). *Planning sustainability*, New York: Routledge.

Office of the Deputy Prime Minister (2005). *Sustainability Appraisal of regional Spatial Stategies and Local Development Documents* (online). Retrieved http://www.communities.gov.uk/documents/planningand building/pdf/142520.pdf (1 May 2009).

Oktay, D. (2004). Urban design for sustainability: A study on the Turkish city, *Journal of sustainable development and world Ecology*, 11, 24-35.

Ooi, G. (2005). *Sustainability and Cities: Concept and Assessment*, World Scientific Publishing Co. Pte. Ltd: Singapore.

Owen, R. (2006). 'Analysis: Naples, a city in the grip of the Camorra', *The Times*, Nov. 1st.

Özden, Ç. and M. Schiff (2005). *International Migration, Remittances and the Brain Drain*, Washington, World Bank.

Pope, J., Annandale, D., & Morrison-Saunders, A. (2004). Conceptualising sustainable assessment, *Environmental Impact Assessment Review,* 24, 595-616.

Porta, S., & Renne, J. (2005). Linking urban design to sustainability: Formal indicators of social urban sustainability field research in Perth, Western Australia. *Urban design International*, 10 (1), 51-64.

Putnam, R., Leonardi, R. and Nanetti, R. (1993). *Making democracy work: civic traditions in modern Italy*, Princeton: Princeton University Press.

Renne, J. (2005). 30 Years in Trends of Transit-Oriented Development across America, TOD: Making It Happen Conference, Fremantle, Western Australia, July 6, 2005.

Rotmans, J. (2006). Tools for Integrated Sustainability Assessment: A two-track approach, *The Integrated Assessment Journal: Bridging Science and Policy*, 6 (4), 35-57.

Skaburskis, A. (2006), 'New urbanism and sprawl: a Toronto case study', *Journal of Planning Education and Research*, 25 (3), 233-248.

Spangenberg, J., Pfahl, S., & Dellar, K. (2002). Towards indicators for institutional sustainability: lessons from an analysis of Agenda 21, *Ecological Indicators*, 2, 61-77.

Taylor, J. (2006). 'International Migration and Economic Development', International Symposium on International Migration and Development, Population Division, Department of Economic and Social Affairs, United Nations, Turin, Italy, June.

Therivel, R., & Partidario, R. (1996). *The Practice of Strategic Environmental Impact Assessment*, Earthscan: London.

Thwaites. K., Porta. S, Romice. O and Greaves M. (eds) (2007). *Urban Sustainability Through Environmental Design: Approaches to Time, People and Place Responsive Urban Spaces,* London: Spon Press.

Troy, P (2000). Suburbs of Acquiescence, 'Suburbs of Protest'. *Housing Studies.* 15 (5): 717-738.

Verheij, R., Maas, J. and Groenewegen, P. (2008). 'Urban—Rural Health Differences and the Availability of Green Space', *European Urban and Regional Studies*, 15 (4), 307-316.

Vipond, J., Castle, K. and Cardew, R. (1998). Revival in inner areas: young people and housing in Sydney. *Australian Planner*, 35: 215–222.

Wilson, L. (2006), Developing a model for the measurement of social inclusion and social capital in regional Australia', *Social Indicators Research*, v74, No.3, pp335-360.

Wilson, L. and Mayer, P. (2006). Upward mobility and social capital: building advantage through volunteering, Research report, for the SA Office for Volunteers, Government of South Australia.

Yates, J (2001). The rhetoric and reality of housing choice: the role of urban consolidation. *Urban Policy and Research*, 19: 491–527.

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