

The Endangered State of Australian Cities Climate Threat and Urban Response

Brendan Gleeson



Urban Research Program

**Issues Paper 8
November 2007**

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The Urban Research Program acknowledges the generous support provided by *Brisbane City Council* for production of the Program's Issues and Research Papers.

ISBN 978-1-921291-25-8

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Brisbane, QLD 4111
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Mr Andrew Hubbard, PhD Candidate in the Urban Research Program provided editorial assistance with this Issues Paper.

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CONTENTS

Introduction: Cities in the Sand	1
The Drama of Sprawl.....	1
(Transe)Ending the Suburban Melodrama.....	3
Resilient Urbanism.....	5
Terror Australis?.....	7
The Urban Vortex.....	10
(Unevenly) Consuming Cities.....	12
Conclusions: Waking from the Dream, Planning for the Storm	14
References	16

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Introduction: Cities in the Sand

Climate change and energy insecurity are real and present threats to the stability and sustainability of Australia. The imminence, scale and speed of both threats seem to overwhelm the principal mitigation strategies on offer. Technological fixes and market adjustments both have vulnerabilities and time frames that appear to make them unviable. Some schemes – notably the switch to renewal energy – are nonetheless necessary to long term security and sustainability, whilst others, especially reliance on nuclear energy, fail on both these counts (Lowe 2007). The only feasible strategy to meet both threats appears to be a massive and sudden decrease in consumption and a rationing of key resources, especially water, oil and energy. We face a time of threat akin to global war: the peril is grave but not insurmountable (Stretton 2005).

This paper considers the meaning of this globally manifest, yet regionally differentiated, ecological threat for Australia's urban system. The analysis extends to consider the twin ecological peril of oil depletion, whose impacts may intensify to great effect the social stresses likely to emerge as climates warm. The paper seeks to intervene in the debate that transfixes, and perhaps immobilises, Australian urbanism: the sustainability of the suburban form in which most Australians live. This debate has over emphasised the environmental significance of urban form and failed to apprehend the deeper socio-cultural forces that drive the consumption of nature.

The deep condemnation of suburban living by Australian urban critique has tended to reflect this scientific failing, whilst also sidelining from mainstream environmentalism the social mainstream of Australia, its suburban populace. Australian urbanism needs to loosen the physical grip of determinism on its environmental thinking if it is to accurately comprehend the sources of, and solutions to, ecological threat. And suburban people, the missing environmental constituency, need to be released from the demonisation visited upon them in urban debate and reinstated to the great social effort that will be needed to defeat global environmental threat.

The Drama of Sprawl

The cities and the systems that support them are the principal sources of the threats we face but also where their solutions can and must be found. A broad scale if not unanimous assumption in scholarly and policy debates is that suburbs are at once the source and the worst reflection of the sustainability crisis. The view has resonated with increasing strength in some domains of popular culture (and perhaps more strongly in elite cultural circuits). Forster recalls comment from a national radio documentary in the early 1990s:

Australian cities have reached a mid life crisis. Two hundred years after European invasion and the beginnings of urban development in this country, we are looking down at the sprawling belly of our cities and exclaiming, 'Oh my God, how did that happen?'. We are full of regret for our gluttonous consumption of space and now we are questioning the ideology on which our lifestyle has been based (in Forster 2004, p.171).

The landscape of Australian urban scholarship and debate has been signed by imported US totems, such as 'sprawl', 'smart growth' and 'new urbanism'. Although sprawl is defined as poorly planned – viz., haphazard – low density urban development (McManus 2005, p.77), the term in use has tended to neatly blanket the entire suburban form, well planned or otherwise. Sprawl's totemic power is signified by the deathly potency granted it in scholarship and commentary, especially in the United States. Hirschhorn's (2005) book reports that Sprawl Kills and annihilates comprehensively by also stealing "your time, health and money". Australian architectural critic Elizabeth Farrelly provides more forensic detail: "...the traffic jams and the water shortages, the poisonous air and the childhood asthma, the obesity, the neuroses, the depression" (2007, p.26). The social impotence of the 'sprawl' totem however is marked by the manifest failure of urban critique to blunt the continuing enthusiasm of Western populations, most especially Australians, for some form of suburban life.

The continuing stand off between a mainstream of intellectual critique and a mainstream of everyday life invites critical consideration. Review of documented evidence and analysis suggests that the critical position on suburbia assumed by much urban commentary may be rooted in poor scientific foundations. At best, the suburban critique – in its present form – may reflect a serious overestimation of the influence of urban form – and of spatial arrangements generally – on sustainability. In particular, the faith of many analyses (and more numerous commentaries) in residential density as a simple lever that can be used to manipulate urban sustainability appears to be misplaced. International scientific assessment of the link between density and energy use remains equivocal. It suggests multi-causal, context dependent relationships between urban form and energy demand. Christoff and Low's review concludes that "... it has never been established that residential densities per se reduce the consumption of energy or greenhouse emissions resulting from travel behaviour" (2000, p. 254). At worst, sprawl-angst masks aesthetic not scientific complaint with the suburban form. Farrelly on suburbia: "Out there, where the masses lives, are the concentric rings of increasing ugliness that calibrate the city's growth..." (2007, p.27).

The poorly grounded and condemnatory critique of 'sprawl' is a vexing problem for a suburban nation. Its failings haunt the grounds of contemporary suburban debate with misleading spectres, whose lamentations warn of obesity, poverty, loneliness and almost every other human malady, including an early death. The 'suburban gothic' tale has produced its equally melodramatic counter narrative, The Great Australian Dream Swindle. This tale of planning noir bemoans a stolen generation of homeownership dreams. A cinema scoped fable of hopeful newlyweds in wagons turned back from suburban frontiers by unfeeling black robed bureaucrats. The black robes have halted the natural order of suburban things by slowing the tide of brick veneer. Those who weave the tale – the Australian Dreamers – wish to safeguard the long slumber of suburban conventional wisdom. Here social intelligence is reduced to the pragmatic axiom: what has (appeared) to work, will always work, and therefore must be always right. As historical analysis shows, this is the axiom of social debility; its continued hold weakens civilisations, eventually to the point of collapse (Diamond 2005).

The Dreamers are led by the Institute of Public Affairs (IPA), various development lobbies (sometimes temporarily in white shoed drag), abetted by foreign jet stars (e.g., Demographia consultants) whose principal discovery seems to be that conventional suburban wisdom is an

international not uniquely Australian trait. All are joined in a children's crusade, urging the masses (apparently) behind them to push the suburban frontier ever outwards in search of the fruits of growth. The crusaders erect their own bogeys: planning, environmentalism, the blabberland of urban critique. At the head of the crusade stands pop demographer Bernard Salt (2007), proclaiming a "people's revolution" against "evil planners". The faithful are urged to march with him to a "People's Republic of Bernardistan" where censors will ban the suburban gothic genre and with it, presumably, any discussion of sustainability, let alone the dire threat of climate change. Jostling Salt for parade leadership is the IPA's Alan Moran (2006), decrying urban planning's theft of the Great Australian Dream of homeownership (also Moran & Staley 2007). His public commentary suggests a prophet, bear skinned, bearded and feverous, ready to lead the faithful into the interior, if that is what it takes to prove that Australia has unlimited land for suburban expansion. A modern Lasseter in search of greenfields not goldfields.

The crusade turns the earlier and sharper critique of planning made by Paterson (e.g. 2000) on its head. For Paterson, planning was an impotent bureaucratic sideshow that occupied a peripheral place in an urban process governed by markets. For the Dreamers, planning is an Inquisition of nay saying clerics charged with tragic potency.

(Transc)Ending the Suburban Melodrama

Neither set of protagonists, Goths or Dreamers, appears likely to comprehend and address the sustainability threats facing urban, including suburban, Australia. Intellectual urban criticism stands counter posed to conventional wisdom. (Metropolitan planning has, without deep analytical assessment, adopted a position that compromises the opposing views, opting for a 'compact city' ideal that accommodates both compaction and Greenfield expansion (Forster 2006).) Both debating positions are powerful polarities, their collective force resisting movement to a transcendent view of the suburbs as shifting landscapes of social and environmental possibilities; neither dystopias nor utopias but fluid human life worlds whose physical qualities inform but do not determine their sustainability.

Geographers once spoke of 'spatial fetishism'; a view of spatial arrangements which simultaneously neglects their historical evolution whilst overstating their social significance. Both poles of our urban debates tend to freeze suburbia in time; either as eco-villain, the contemporary McMansion (large house, small lot) or as nostalgic hero, the white picket hearth-land from which has flowed a pure river of human improvement. The first fails to recognise that earlier Australian suburbia was both low density and infinitely more sustainable in terms of make up and lifestyles than any contemporary urban setting (see Gaynor 2006), most especially the dense, über consumption landscapes of our inner cities. (And not all contemporary suburban development is McMansionesque.) The second assertion neglects the many social and environmental failings of historical suburban forms, and tends to ignore or grossly underplay the contemporary sustainability threat.

Both perspectives overstate the power of the suburban (or any urban) physical form to craft social and environmental conditions. At once historically frozen, and yet all determining, the suburb in each narrative is dis-embedded from the city, and severed from the comprehensive

ecological metabolism that hosts it. This denies the suburb its place in a city properly conceived as a complex social-ecological system. For Coelho & Ruth (2006, p.3) an eco-systemic view of the cities – by way of scientific analogy not perfect ontological correspondence – defines them as “...emergent phenomena embedded within a spatial and historical context of interacting processes”. The city in this view is not a series fixed dioramas (suburb, apartment-scape, knowledge city, urban playground) set in lifeless juxtaposition but a flow of nested systems that comprise a continuously evolving urban structure. The evolution is present at every process level, beginning most especially with the mortality of human subjects. Evolution, and therefore adaptation, are endemic not optional urban characteristics, and represent imperatives for urban science and policy. Thus, “If we approach cities as complex social-ecological systems we must embrace change and evolution. There is no single optimal state towards which we may strive...” (*ibid.*). This is to say, there exists no definitive blueprint of urban sustainability. Hope lies not in a final model of stabilised optimality (the urban village, the compact city, the eco-village) but in a restively adaptive and resilient urban system. Here the goal of planning is to maintain “the social-ecological system’s ability to evolve and develop” (*ibid.*).

The eco-systemic view signalled here refuses the lure of determinism and accepts an evolving and context dependent view of the power of built environments to shape human societies and their ecologies. A high density urban village might be conducive to social interaction and happiness but not if it’s tawdry, car dependent, congested, polluted and home to an elite ‘demographic’ who want peace and privacy not encounter and surprise. A low density suburb might have a relatively modest ecological footprint, if householders restrain their consumption of goods and services, use cars only when necessary, grow food, collect and treat water, and shop and socialise locally.

A view of the city as an evolving social-ecological system also suggests the primacy of contemporary social and ecological imperatives over moral or aesthetic conceptions of urbanism. These shifting imperatives define and redefine the continuous task of adaptation that must maintain the resilience of the urban system. Arguably, Australian urban debates have been ill served by views that the suburban form (in its diversity) is/was inherently ‘bad’ or inherently ‘good’. The determining power of suburbs – and of density generally – has been overstated, and the evolving underlying environmental and social forces shaping the course of urbanisation overlooked. These forces surface, combine and descend in specific contexts – a fringe masterplanned estate; a brownfield high rise development; an ageing middle ring suburb – to produce a differentiated geography of urban sustainability – and vulnerability. What is not in doubt is the shared determination of all contexts by the deeper forces generating contemporary environmental threats – over consumption, carbon dependency, weakening solidarity, etc. The eco-systemic view exposes underlying urban change forces as part of “...hierarchical or nested systems, which are characterised by elements interacting horizontally with each other and vertically within larger organizing structures” (Coelho & Ruth 2006, p.3).

The most pressing environmental imperatives facing contemporary metropolitan Australia include the increasing difficulty and danger of further outward extension of the suburban frontier, which now approaches catchments and valuable recreation space, and the speed and the scale of the climate change threat. The growing vulnerability and expense of oil supplies also underlines the risks inherent in further urban extension. This suggests that some form

of compaction is inevitable, unless population growth rates fall and/or alternative settlement policies emerge, notably broad scale decentralisation. Collective human decisions not simply nature will drive the evolution of environmental imperatives. Thus intensification emerges as a consequence of environmental and planning imperatives, not – in the first instance – as a lever to engineer future environmental or aesthetic improvement. In short, we now know enough about densification to dispense with the assumption that it inevitably – not to say mechanically – produces benefits. In some contexts it will, in others not; in some (i.e., planned) forms it will; in others (i.e., market driven) it won't.

The principal social imperative of contemporary urban Australia is that the overwhelming majority of urban citizens reside in some form of suburban setting. This simple social fact defines not only the conditions for planning, and urban policy generally; it must be the starting consideration for the national effort required to meet the twin emergencies of climate change and oil vulnerability. An allied but not peripheral consideration is social inequity. At the larger social scale, there is a significant wealth divide between lower density suburbia and the inner urban higher density domains. This is a general not exclusive divide – there exists concentrations of poverty and wealth in both domains. The most entrenched and worsening areas of disadvantage are, however, grouped in suburbia, particularly within the ageing middle rings of the major metropolitan regions (Randolph & Holloway 2005). It would be risky for public policy responses to environmental pressures to ignore this uneven geography of advantage. It would be grossly inequitable and self defeating if policy was to work against it and devise measures that unfairly burden suburban Australia. Later analysis in this paper will demonstrate that the burden of environmental responsibility also falls most heavily to the wealthy not middle income or poorer suburban areas of our cities.

These contemporary imperatives set the framework for the planning response to environmental threats. The suburbs will be a first line of defence and need to be engaged and treated fairly in the debates and actions that will address warming and energy insecurity. The adaptive potential of suburbs has also been understated or completely cast aside by views that portray them as either mortally imperilled by, or completely immune to, ecological dysfunction. History, if nothing else, testifies that suburbs can be vastly more sustainable than they presently are (Troy 2003). A great task of adaptation – suburban renovation – must begin the transition to urban resilience.

Resilient Urbanism

The 'resilient urbanism' sketched out above has three principal limbs. First, the eco-systemic conception suggests that urban science and policy should relinquish any belief in – and certainly any aestheticised desire for – any stabilised, end state urban system. The premise is evolution, ceaseless in motion and restless in form, for that most essential human creation, the city. The 'heavenly city' as its name suggests lies beyond the horizon of human consciousness, in death. The living must accept the inevitability of evolution, the necessity of adaptation, and embrace the hope of resilience. An evolving urban metabolism is the constant companion not the adversary of science and policy. Thus, urban research (and its master/servant shadow, urban planning) must:

...be holistic as well as focus[ing] on individual sectors/components. Each alone is not sufficient for understanding the functioning of the whole system, and we should constantly strive to look up and down two levels from our primary point of reference. In order to understand more complex systems we need to look above (at a larger organizing system) or below (at components and their behaviour) to understand the whole. This requires embracing complexity and dynamics, and accepting uncertainty..." (Coelho & Ruth 2006, p.8).

Urban planning, commendably, has long sought to defeat disorder, of the market, of venal human intention. The adaptive view suggests that disorder should not be confused with evolution and its offspring, complexity and uncertainty. Planning in capitalism must accept its limited authorship of change, meaning, inter alia, its inability to punctuate change by ending it. Planning must look to steer change, mould it, in search of urban resilience. The resilient city is the goal: the interplay of evolution and adaptation (policy) will shape its restless form.

Second, against determinism, and in consequence of the above, it is important to clearly define the horizon of realistic ambition for planning and urban policy. In its physical manifestations, planning can expect to condition but not determine the social and environmental qualities of Australian cities. Planned adaptation to secure urban resilience necessarily involves collective human actions that lie beyond the horizon of urban policy. It is important, for example, not to expect more than densification, in its best forms, can achieve in terms of sustainability.

Planning is a shifting ensemble of activities (zoning, infrastructure, services, design, etc.), all of which converge in the best of circumstances to effect major improvements to urban well-being and efficiency. Good planning is a precondition for urban sustainability and resilience. Yet, held in isolation, any particular planning activity may have only modest potential to enhance well-being and, if mishandled or over prioritised, significant potential to cause harm. Establishing the proper horizon of ambition is a precondition for successful planning and should not be confused with defeatism or cynicism. Urban planning must resist the exaggeration of ambition that is sometimes claimed for it or thrust upon it. To not do so is to risk abetting reactionary inclinations that wish to deflect attention from the underlying causes of environmental and social threat in market societies: the tendency to uneven social development inherent in market relations and the tendency to overproduction that inevitably flows from the 'growth fetish' embedded in the contemporary political economy. Neither tendency can be ultimately checked through 'spatial fixes'.

The third limb of resilient urbanism is equity, meaning fairness not simple equality. A premise is that human affairs, including the distribution of wealth and environmental amenity, are shaped by the play of social relations and not: ordained by fate/nature; determined by received attributes (class, race, gender); nor produced by mechanisms (markets). There is ample historical and social scientific evidence to demonstrate that equity and social solidarity are positively correlated, and that, in amplitude, both generate high levels of collective welfare (Stretton 2005). This received wisdom is strengthened by mounting evidence that equity restrains environmental degradation and reduces social exposure to ecological risks. In quest of social resilience, public policy carries a scientifically authorised duty to ensure that the conduct of social relations, including urban affairs, is governed by equity. The deterministic mantle that has settled over Australian urban debates

seems, amongst other things, to have stifled an interest in, and commitment to, social equity and solidarity. It may be that some environmental perspectives see equity as a subsidiary or secondary priority in the face of ecological threat when in fact fairness is a precondition for sustainability. For their part, the proponents of unfettered urban and suburban growth may enlist the language of equity to their cause (‘the [collective] dream of homeownership’) when in fact they seek to mask the rule of money and power in urban land markets and to deny the sustainability threat that looms over urban Australia.

Equity therefore must be a first order priority for the deliberation and action needed to meet and overcome the sustainability emergency. Australian urban studies would do well to reawaken the interest it once had in urban equity. Further, Australian urban planning must embrace equity not simply as an end but also as an important restraint on the horizon of professional ambition. No policy direction, however technically or economically compelling, should fail the equity test. We might immediately restrain land take at the urban fringe if all new households were herded into high density housing, somewhere. The inequity spiral that this scenario risks is obvious: sudden, mass compaction, were it feasible, would create a well spring of social resentment and, as will be explained below, not do much to meet the threat of climate change. Equally, we might meet for a time unrealised housing demand by resorting to ungoverned fringe growth. This scenario is as ludicrous and as risky as the former: it ignores the claims of sustainability entirely and it would worsen inequity and social vulnerability by, *inter alia*, extending the landscape of oil dependency. Neither scenario would be contemplated if the underlying problems of uneven development and over production in the neo-liberal growth economy were addressed through transition to a sustainable political economy. Urban resilience cannot be attained through policy simplisms that discount or trade-off the necessity of solidarity and the imperatives of sustainability.

The remaining discussion applies the resilient urbanism sketched above to the contemporary urban setting. It does this by considering the principal environmental and social imperatives facing urban Australia, focusing on the ecological and societal threats raised by climate change and oil vulnerability. The time scales for policy response are governed by the manifest speed at which the threats are unfolding. Climate change, Athanasiou (2007) would have it, represents a contemporary social emergency not a looming predicament.

Terror Australis?

Hugh Mackay’s (2007) extensive social analysis suggests that Australians are in two minds today. Many of us celebrate the economic boom that has generated new levels of prosperity and pushed unemployment and want to the margins of consciousness. And yet growing numbers of Australians are increasingly disturbed by two comets that seem to be streaking across and spoiling the bright skies of prosperity – climate change and oil scarcity. One fiery trail reports a climate cooked and despoiled by human greed. The other marks the disappearing trail of vital resource, the energy that propelled us to greatness, and yet ultimately, became our downfall.

This two-mindedness has supplanted a long period of single-minded (even mindless) interest in wealth and play. Mackay (2007) reports an Australian populace waking from a decade

long slumber that was marked by social withdrawal and creeping narcissism (also Manne 2006). Mackay explains this 'Dreamy Period' as a collective narcolepsy induced by the miracle economy and a general fatigue with neo-liberal reform. After switching off the abstract horrors of global terrorism and war in favour of introspection and hedonism, the collective sensibility appears recently aroused by the twin conjunction of two perceived threats: bone cutting labour reforms (the Howard government's 'WorkChoices' package) and a water crisis strengthening its arid grip on urban populations. The latter is especially important because it seems to have awakened dormant concern about global warming:

Not since the 1980s has there been such widespread openness to the possibility that the planet is sending us a message. A drought that seriously threatens the water supplies of our capital cities, bushfires that rage out of control for months...and the mounting evidence of global warming all suggest there's an issue here we can't ignore (Mackay 2007, p.294).

The very earth upon which we stand seems to be moving under our feet; things, solid things, around us seem to be swaying. The wonderful climate long envied by the world seems to be turning on its human inhabitants. Terra Australis is becoming Terror Australis; a blast furnace of drought, heat, and capricious tempests. In April 2007, the Prime Minister intoned gravely that the nation's food bowl, the Murray Darling Basin, might soon fail. There was talk of the need to import food. In the cities, traditionally immune to drought, years of prolonged water shortage showed in the greying, lifeless gardens of suburbia, where lurked a quiet, deepening gloom about the deaths of things once cherished and nurtured. Mackay (2007, p.306) writes of the new way Australians comprehend the everyday world:

..we see daily evidence of our own recklessness and the fragility of our won immediate environment, especially in the water shortages but even in the brown smudge that, for years, has hung menacingly in the skies above our two major cities.

Meanwhile, increasing numbers of analysts speak of 'peak oil': a looming moment when the world's oil reserves will start to decline. The idea has been about for a while, but has been dismissed by governments and industry as the baseless rantings of survivalists, doomsayers and eccentric dons. Not so anymore. Both the Australian Senate (2007) and the US Government Accountability Office have recently acknowledged the reality of peak oil. Estimates of when the peak will occur (or occurred) differ. The Queensland Government's 2007 Oil Vulnerability Task Force reviewed a variety of assessments and concluded: "the overwhelming evidence is that world production will peak within 10 years" (p.8). No matter when it occurs, explosive global demand and geopolitical instability mean that the golden age of oil abundance is behind us. For most Australians, the oil default is sudden, unexpected and deeply inconvenient. The busy, free ranging lives celebrated, indeed mandated, by neo-liberalism seem threatened. Social surveys report aspiration souring turning to desperation. In early 2007, a survey of more than Australian 5000 families identified rising petrol prices as the main source of financial concern: the new workplace laws were next (Heywood 2007).

Sometimes passing through and surviving one crisis engenders not a sharpened wariness but its opposite, a heightened sense of invulnerability. So it seems with the 1970s oil shocks which, by the 1990s, had passed comfortably into memories, adding evidence to the theory that market societies were indeed the 'End of History', the highest and most invulnerable social form. The unexpected return of oil scarcity surely deeply unnerves the collective

mind, cracking open a cemented faith in social invincibility. Also unnerving is the mounting awareness that Australia is a global 'filthyman', stoking the global carbon economy with cheap, dirty coal (Hamilton 2007). Conservative commentary which casts Australia as an insignificant greenhouse contributor tends to sidestep our critical role in the global smokestack economy. Mackay describes the inconvenient and discomfiting truth of the matter: "Wherever we send our coal to be burned, our moral obligation goes with it..." (2007, p. 307).

These shocks and shifts are disturbing with rising electrical force the political climate of Australia in 2007. Revealingly, Tim Flannery, the 2007 Australian of the Year is a climate change warrior, an incessant voice in the background for the past decade warning about global warming in the face of political indifference. Much public intellectual criticism has been leveled at the Commonwealth government's dominating lethargy on climate change. Hamilton writes: "For 11 years the Howard Government has been the captive of the fuel lobby, and has been lagging well behind the thinking of progressive business" (2007, p.18). And now politics, that capricious and too visible hand of change, has passed the microphone to the climate change warriors, and the news is grim.

When The Sydney Morning Herald extracted material from Flannery's widely read book, *The Weather Makers*, it titled the material 'Civilisation's Darkest Hour' (Flannery, 2005). This tense metaphorical casting looks increasingly appropriate given the imminence of the climate threat. The most recent scientific assessments which consider the impact of positive feedback (i.e., warming accelerating warming) have radically reduced the timescale for 'acceptable' global atmospheric warming to perhaps as short as 10 to 15 years (Hansen 2006). Flannery (2007a) explains:

There's now about 430 parts per million CO2 equivalent (sic). The science suggests when we get to 450 per million, it stands about 20 per cent chance or less of triggering dangerous climate change. So in that sense we don't have very long. We are accumulating at the rate of two or three million parts per year. We will hit that threshold within a decade.

Even this assessment now appears too conservative. In October 2007, Flannery (2007b) reported that, according to the Intergovernmental Panel on Climate Change, the '450 scenario' has already been reached, in 2005.

Athanasίου's (2007) reading of international scientific assessment reinforces the view of global warming as a climate emergency. His 'acceptable warming' limit is two degrees (using Stern's baseline), of which 0.8 degrees has already occurred and a further 0.5 degrees appears inevitable. If two degrees warming were to occur, science predicts major eco-system collapse, severe sea level rise, significant loss of terrestrial species, and a dramatic rise in environmental stress for human populations, especially those in the poor global megacities of the South. Athanasίου and colleagues note the growing scientific consensus that warming is accelerating, driven largely by positive feedback, leaving little time before the 'safe' warming point is passed (Athanasίου *et al.* 2006). Jim Hansen (2006), who is director of NASA's Goddard Institute for Space Studies, and senior Bush Administration climate modeler, writes:

How long have we got? We have to stabilize emissions of carbon dioxide within a decade, or temperatures will warm by more than one degree. That will be warmer than it has been for half a million years, and many things could become unstoppable. If we are to stop that, we cannot wait for new technologies like capturing emissions from burning coal. We have to act with what we have. This decade, that means focusing on energy efficiency and renewable sources of energy that do not burn carbon. We don't have much time left.

Startling assessments of warming are finding their way into the public domain. In 2006 James Lovelock, prominent international scientist and environmentalist, offered a grim, not to say apocalyptic, appraisal in Britain's Independent newspaper:

I cannot see the United States or the emerging economies of China and India cutting back in time, and they are the main source of emissions. The worst will happen and survivors will have to adapt to a hell of a climate...as the century progresses, the temperature will rise 8 degrees centigrade in temperate regions and 5 degrees in the tropics.

Not surprising then is the evidence that Mackay reports of deep unease in the social consciousness; the substrate of politics. A new social sensibility is evident; rising societal awareness of vulnerability to sudden, even wild, changes in the natural forces that industrial capitalism had considered vanquished and shackled to the wheel of progress. The message of threat posed by the very instruments that brought economic potency and material success is difficult to absorb in the middle of 'miracle economy' party. As Flannery observes, with some understatement, "...climate change is difficult for people to evaluate dispassionately because it entails deep political and industrial implications and because it arises from the core processes of our civilisation's success" (2005, p.19). Perhaps this is why Australian urbanism so often focuses ecological complaint on that most obvious, even droll, manifestation of civilisation – suburbia. The real villains in Flannery's account – 'core processes' – simply lie beyond the scale of urban analysis and policy ambition.

The Urban Vortex

The 'Vortex Cities' (McManus, 2005) of globalised neo-liberalism are where the world, and especially Australia, must confront and account for the problem of environmental bankruptcy. Urban systems animate and amplify the core processes (Flannery) that harm climates and exhaust resources (Low *et al.* 2000). They are at once the locus of threat and a site for containment and resolution; viz., repositories of threat and hope. The goal of sustainability requires transition from urban vulnerability to urban resilience.

The potency of strategies that aim to curtail the consumptiveness of cities is undermined by urban conceptions rooted in aesthetic or moral complaint. Denial of fundamental (sub)urbanity is an enduring feature of Australian public life. To the extent that cities, especially suburbs, have featured in Australian cultural life they have, with few exceptions, been causes for complaint or embarrassment. The stream of urban environmental criticism that has emerged in recent decades invites identification with this reproachful tradition. This criticism has correctly implicated cities (though usually meaning suburbs) in the sustainability crisis, but it has been heavily coloured by a deep rooted predisposition in Australian public life; the tendency to chastise cities for their unlovely suburban form. For Davison (2006), urban criticism as suburban chastisement has produced a culture of disengagement;

environmentalists eschewing suburbia, suburbia dismissing environmentalism as grievance not insight. A potentially powerful green urban critique is thus weakened by twin failings: reductionism – cities condensed to suburbs – and disengagement, refusal to recruit the social resources – suburbia – that will be needed to defeat the threats of warming and energy vulnerability.

As the commentator Michael Duffy (2007) points out, the Howard government in 1990 extracted a sweet deal from the Kyoto Treaty that it never signed by having reductions in land clearing included in the calculations of net carbon emissions. It then left to the states the political dirty work of reining in land clearing. The farming sector had some cause for complaint with the cities and the contemporary ‘growth machine economy’ that drives them. As The Climate Institute pointed out in 2006,

Australia’s farmers have been responsible for virtually the entire share of the nation’s greenhouse reductions...Over the same period, emissions from energy and transport have and continue to skyrocket. For example, total energy sector emissions are projected to be 45 percent above 1990 levels by 2010 (in Duffy 2007, p.39).

This scenario hardly sanctifies the farming sector, much of which continues to ignore or defy the sustainability threat. It does, however, highlight disregard for the lengthening ecological footprints of Australia’s cities in policy mainstreams, especially at the national level where responsibility for climate change response principally lies (McManus 2005).

Duffy upbraids “urban greens” for displacing the greenhouse mitigation burden on to farmers. He is right that green advocacy has not generated broad policy focus on the cities. “Urban green” is a term that signifies the largely urban, indeed metropolitan, location of the organised environmental movement. Most urban green advocacy has concerned non-urban realms, including river systems, forests and wilderness areas. The thin, if growing, stream of green urban critique that has emerged in recent years has been marked by analytical weakness, revealed as physical determinism and aesthetic complaint. A notable early exception was the eco-systemic view of the Australian city produced by the Socialist Alternative Melbourne Committee in 1985. This ‘socialist plan for Melbourne’ was uniquely comprehensive in its assessment of the underlying causes of urban dysfunction. The plan’s analyses and prescriptions addressed the political economy and not merely the physical manifestations of over-consumption. Its mirror image is the opaque moralism of the suburban gothic tale embraced by mainstream environmentalism.

A translucent version of the suburban gothic has gripped Australian urban planning from the early 1990s, lacking the dark coloured aestheticism of architectural and environmental critique. The ‘suburban noir’ registered in contemporary and recent planning was doubtless informed and energised by environmentalism, but surely had its origins in earlier technical complaints, such as *A Mansion or No House* (Paterson, Yencken & Gunn 1976) which saw low density as an axiomatic failing of Australian urban development. To its credit, planning, unlike much of the policy mainstream, opened itself to sustainability critique from the earliest possible times. The legacy of first wave environmentalism was registered in ground shifts such as the NSW Environmental Planning and Assessment Act 1979. The reform thrust focused on policy design and environmental assessment not on physical form. Posterity must consider how this bright wave of environmental enthusiasm succumbed to

the noir of anti-suburbanism in the 1990s. Since then, the 'suburban melodrama' described earlier has tended to transfix and delimit planning debate and practice. From central casting have emerged the villainous 'beast of suburbia' and the heroic ideal of compaction. Sprawl was show trialled. Planning, teary eyed, accepted the errors of its earlier modus, suburban 'sprawl', in favour of a new urban(ist) script. No logical matter that sprawl is a US term that denotes the absence of planning. The discursive shift set aside, without acknowledgement, the quiet, though massive, accomplishments of Australia's (relatively) planned twentieth century suburbanisation.

(Unevenly) Consuming Cities

The vortex of Australian urban debate and policy has produced as much confusion as insight. The planning responses evident in the vortex – largely market driven compaction – have done little it seems to restrain the consumption of nature by Australia's human settlements (Australia State of the Environment Committee, 2006). Energy use, greenhouse emissions and oil dependency continue to grow in the face of looming and present threats to the fundamental systems that support the cities.

The suburban gothic tale has helped to engender a misleading, and perhaps elitist, view of the suburbs as the root and trunk of the sustainability crisis. This view, strongly entrenched in green, and increasingly mainstream, urban criticism is contradicted by mounting scientific evidence which points to the consumptive neo-liberal lifestyle not the nature of one's dwelling as the root of our environmental woes. The most conceptually and politically powerful instance of this evidence is the set of urban consumption analyses produced for the Australian Conservation Foundation (ACF 2007) by the Centre for Integrated Sustainability Analysis at the University of Sydney. The work, summarised in a Consumption Atlas, uses both input-output analyses and interpretation of household expenditure data to map patterns of consumption and environmental footprint across urban Australia. The web based Atlas reports a consistently uneven geography of urban consumption and impact. The Main Findings report accompanying the Atlas summarises thus:

...despite the lower environmental impacts associated with less car use, inner city households outstrip the rest of Australia in every other category of consumption. Even in the area of housing, the opportunities for relatively efficient, compact living appear to be overwhelmed by the energy and water demands of modern urban living, such as air conditioning, spa baths, down lighting and luxury electronics and appliances, as well as by a higher proportion of individuals living alone or in small households. In each state and territory, the centre of the capital city is the area with the highest environmental impacts, followed by the inner suburban areas (ACF 2007, p.10).

The sense of surprised disappointment is palpable: "The profiles [maps, analyses]...are challenging, for individuals as well as governments and organisations seeking environmental change" (ACF 2007, p.4). The Main Findings discussion does not, however, attempt to subordinate the significance of the analyses, which turns conventional environmental wisdom on its head:

They suggest that even drastic measures to reduce direct personal water and energy use may not have the desired effects, unless they are complemented by strong action to reduce

the environmental impacts associated with the food we eat, the clothes we wear, and all of the other products we buy (*ibid.*, p.4).

The simple point is that total household energy consumption, and therefore greenhouse emissions, is comprised of both direct and indirect components: the former is the energy used to maintain everyday lives – petrol, gas, electricity – and the latter is the energy embodied in goods and services consumed by households. Whilst most, if not all, of the focus of urban commentary and policy is on direct energy use, “In fact, direct household and person use accounts for only 30 percent of our total greenhouse gas pollution, 23 percent of our total water use, and just 10 percent of our total eco-footprint (*ibid.*)”.

The limited analytical foundations of much urban debate in Australia are revealed in the frequently reductionist and misleading conceptions of household consumption and impact. Too often total consumption is taken to mean direct consumption; the petrol, gas and energy use patterns that appear to be most influenced by urban form. The reality of direct consumption sets a horizon of ambition for planning that is much more constrained than that assumed by conventional policy wisdom:

The areas where a household has relatively direct control – such as their own electricity, gas, and transport use – account for less than a third of total emissions. In fact, if every Australian household switched to renewable energy and stopped driving their cars tomorrow, total household emissions would decline by only about 18 % (*ibid.*, p.5).

Even this horizon is not without its disruptions and incursions. Recent evidence suggests for example that many high density areas of Australian cities exhibit neither low car dependency nor low operational energy use (Hodgetts 2004; Myers *et al.* 2005). The contextual – that is place-rooted – influence of form appears to be confirmed by the equivocal evidence on density as a determinant of consumption and impact. Urban policy is strengthened not enfeebled by this finding which underlines the necessity of careful place based planning as the precondition for low environmental impact.

Whilst the analyses cited above demonstrate the fallacy of the suburban gothic tale, at least on ecological grounds, they provide no reasons to be sanguine about the sustainability of suburbia. Oil vulnerability deeply threatens the suburban landscape, which unlike inner metropolitan areas, have no recourse to quality public transport services. The analyses of Dodson and Sipe (2006) of metropolitan oil vulnerability also consider the influence of intra-urban income disparities and debt exposure, which place further burdens on suburban households. The threat of oil vulnerability raises another vital adaptation role for planning in the contemporary urban context – guiding a suburban overhaul that will reduce household car dependency through major improvements both to public transport services and to regional and local urban structure. The latter will involve, inter alia, a relocalisation of household social and economic activity through strengthened planning and service provision in neighbourhoods and in regional centres.

Conclusions: Waking from the Dream, Planning for the Storm

Nature is, if nothing else, the rule of the temporal. Frailty, mortal anxiety and death are the human tributes to this sovereignty. It is in the city that humanity attempts to depose time, its oldest foe, by rationalising nature. The urban process, and everyday city life, can be understood as a great act of mutiny against the natural forces that govern all materiality. And yet, the urban rebellion produces not the reign of pure reason but the unruly disruption of nature, the speeding up of time. The mightier the acts of rebellion – viz., the mutinous storm of industrial modernity – the greater the super-naturalisation of human existence. Blueprint plans, ideal dioramas, model urban villages, are the idols of rebellion, all destined to the oblivion of quickened nature, the urban vortex. If humanity is to proceed safely through the storm it set for itself, believing on balance the urban vortex to be a good thing, then its best collective instincts (policy, planning) must be deployed in quest of resilience not perfection. Resilience requires collective thought and intervention to mitigate natural disruption and adapt urban systems to the quickening that must occur.

A climate changing faster than scientific comprehension bears witness to the super-natural force of industrialism. Global warming is the quickening of time and nature produced by urbanisation. Oil depletion is the other great speeding of urbanised nature. The terrible spatial and temporal scales of disruption contrast starkly with the fragile institutional systems and meagre resources dedicated to urban resilience. In one sense planning is the urban Maginot Line, its principal mitigative capacities already sidelined by the global environmental menace. The ACF analysis indicates the moderate influence that urban form – the main object of planning effort – has on energy use and greenhouse emissions. Urban form and structure, however, have a much more potent bearing on household use of, and dependency on, the direct forms of energy, notably oil, that are likely soon to be in scarce supply. This indicates a critical field of urban endeavour: reducing by good design and planning the vulnerability of cities to resource shortages, notably water, coal and oil. The ambition is part mitigative – to slow the inevitable decline of key resources – and part adaptive, to heighten the resilience of urban landscapes in a context of rising resource finitude.

In the fight against global warming, planning's prime contribution is adaptation in search of climate resilient cities. This means the creation of urban environments that will withstand the vagaries of a harmed climate and rising resource shortages. A critical view is invited of the urban environments created by the 'growth fetish' (Hamilton 2003) economy of recent neo-liberalism; the political economy that has simultaneously ignored and massively intensified the climate problem. Silent on Nature, it has loudly urged to ever greater heights the consumption festival that has accelerated the long run course of environmental ruin. These landscapes include contemporary McMansion-lands, as well as the more damaging vertical sprawl produced by wild, market driven consolidation. Equally, the latent adaptive capacity, and therefore the potential resilience, of the 'traditional' suburban form await serious reconsideration (Troy 2003).

The hallucinations that colour and distract much planning debate must be dispelled in favour of an urban effort compelled by the immediate ecological and social imperatives facing Australia's climate threatened cities. These illusions include the proposition that urban form

determines greenhouse emissions and the declamations of anti-suburbanism. Delusion and declamation of this sort in the public domain may be undermining the fight against warming by demobilising the mass of urban citizenry. Davison (2006) is right to say that anti-suburbanism engenders disenchantment and withdrawal by the (sub)urban civil society that originally gave birth to environmentalism. In this sense, the mainstreams of urban criticism are exercising a desocialising and therefore profoundly damaging influence on efforts to generate a societal response to global warming and oil depletion.

The climate emergency is the greatest environmental imperative facing cities and human societies. It presents the most compelling adaptive challenge for policy and science committed to urban resilience. Urban studies and policy must assist human settlements to adapt to the climate dislocations ahead, including finding ways to minimise the risks to human well-being, even life, as the changes unfold. Maintaining equity and therefore solidarity will be critical to the success of mitigation and adaptation strategies. Urban science and policy should ponder how equity is to be maintained in the face of threat, disturbance and displacement. In particular if resource rationing is required, how is fairness to be maintained in the climate of universally inflated consumption expectations generated by two decades of neo-liberalism? The long subordinated questions of fairness and solidarity will need to be reinstated politically to safeguard the social order in a long period of stress. Without this commitment, society might survive but democracy may not.

References

- Athanasίου, T. (2007) Justice within limits, Public Lecture, Griffith Univ, Gold Coast, 10 August
- Athanasίου, T., Baer, P. & Kartha, S. (2006) Greenhouse Development Rights, EcoEquity and Christian Aid; accessed at: http://www.ecoequity.org/GDRs/GDRs_Nairobi.pdf
- Australian State of the Environment Committee (2006) Indicator: HS-37 Energy Use per Capita and per unit of GDP, Data Reporting System, accessed at: www.environment.gov.au/soe/2006/publications/drs/indicator/330/index.html
- Australian Conservation Foundation (ACF) (2007) Consuming Australia: Main Findings, accessed at: www.acfonline.org.au/consumptionatlas
- Australian Senate (2007) Inquiry into Australia's future oil supply and alternative transport fuels: Final Report (Canberra, Australian Senate)
- Christoff, P. & Low, N. (2000) Recent Australian urban policy and the environment: green or mean?, in: Low, N., Gleeson, B., Elander, I. & Lidskog, R. (Eds), *Consuming Cities* (London: Routledge), pp. 241-264
- Coelho, D. & Ruth, M. (2006) Seeking a unified urban systems theory, Fourth International Conference on Sustainable City, Tallinn, Estonia, 17-19 July
- Davison, A. (2006) Stuck in a cul-de-sac? Suburban history and urban sustainability in Australia. *Urban Policy and Research*, 24(2). pp. 201-216
- Diamond, J. (2005) *Collapse: how societies choose to fail or survive* (Camberwell: Penguin/Allen Lane)
- Dodson, J. & Sipe, N. (2006) Shocking the suburbs: urban location, housing debt and oil vulnerability in the Australian city, URP Research Paper no.8, Griffith Univ, Brisbane
- Duffy, M. (2007) Out there on the land there's little gold in them climate-saving tress, *The Sydney Morning Herald*, 5-6 May, p.39
- Farrelly, E. (2007) Our cities reveal the ugly side of democracy, *The Sydney Morning Herald*, 6-7 October, pp.26 & 27
- Flannery, T. (2005) The Weather Makers: extract in *The Sydney Morning Herald*, 24 September, p.19
- Flannery, T. (2007a) Tim Flannery on climate change, *The University of Melbourne Voice*, 1(14) accessed at: http://uninews.unimelb.edu.au/unarticleid_4627.html
- Flannery, T. (2007b) Interview, broadcast ABC Lateline, broadcast 8 October 2007
- Forster, C. (2006) The challenge of change: Australian cities and urban planning in the new millenium, *Geographical Research*, 44(2), pp.173-182
- Gaynor, A. (2006) *Harvest of the Suburbs* (Crawley: The University of Western Australia Press)
- Hamilton, C. (2003) *Growth Fetish*, (Sydney: Allen & Unwin)
- Hamilton, C. (2007) *Scorcher* (Melbourne: Black Ink)
- Hansen, J. (2006) Climate change: on the edge, *The Independent*, p.1
- Heywood, L. (2007) Fuel costs his families hardest, *The Courier Mail*, 7 May, p.13
- Hirschhorn, J. (2005) *Sprawl Kills* (New York: Sterling & Ross)

- Hodgetts, C. (2004) Urban Consolidation & Transport, unpub. MA Thesis, Univ. Melbourne
- Lovelock, J. (2006) The earth is about to catch a morbid fever, *The Independent*, 19 September, p.
- Low, N., Gleeson, B., Elander, I. & Lidskog, R. (Eds) *Consuming Cities* (London: Routledge)
- Lowe, I. (2007) Reaction time: climate change & the nuclear option, *Quarterly Essay*, issue 27
- Mackay, H. (2007) *Advance Australia Where?* (Sydney: Hachette)
- McManus, P. (2005) *Vortex Cities to Sustainable Cities: Australia's urban challenge* (Sydney: UNSW)
- Manne, A. (2006) What about me?, *The Monthly*, June, pp.30-40
- Moran, A. (2006) *The Tragedy of Planning* (Melbourne: The Institute of Public Affairs)
- Moran, A. & Staley, L. (2007) Locked Out: How Victoria's land supply laws are keeping young people out of the housing market, *Occasional Paper*, (Melbourne: The Institute of Public Affairs)
- Myors, P., O'Leary, R. and Helstroom, R. (2005) Multi-unit residential building energy and peak demand study, *Energy News*, 23(4), pp. 113-116.
- Paterson, J. (2000) Choice and necessity in metropolitan planning, *Urban Policy & Research*, 18(3), pp.377-86
- Paterson, J., Yencken, D. & Gunn, G. (1976) *A Mansion or No House: A Report for UDIA on Consequences of Planning Standards and Their Impact on Land and Housing*, (Melbourne: Hawthorn Press)
- Queensland Government's (2007) *Oil Vulnerability Task Force Report*, Queensland Govt, Brisbane
- Randolph, B. & Holloway, D. (2005) Social disadvantage, tenure and location: an analysis of Sydney and Melbourne, *Urban Policy & Research*, 23(2), pp.173-202
- Salt, B. (2007) Revolution against evil planners, *The Australian*, 18 August, p.
- Socialist Alternative Melbourne Committee (1985) *Make Melbourne Marvellous! A draft for wide discussion on socialist alternative Melbourne 2000*, Melbourne: Communist Party of Australia
- Stretton, H. (2005) *Australia Fair*, (Sydney: UNSW Press)
- Troy, P.N. (2003) Saving our cities with suburbs, *Griffith Review*, Summer 2003-4, pp.115-28