

Urban sustainability

Patrick Troy

The Australian National University, Australia

The Economic and
Labour Relations Review
24(4) 469–480

© The Author(s) 2013

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1035304613510232

elrr.sagepub.com



Introduction

This policy article is a contribution to a debate we must have about the future of urban life where the capacities and stability of the ecosystems on which we depend now challenge the validity of the growth and management strategies we have hitherto pursued. The debate must also be about sharing the burden of remedial action.

Australia is and has long been an urban nation – almost 90% of the population live in cities and over half live in the nation's three largest cities. Butlin (1964) reminded us that Australia was an 'urban nation' in economic terms. More recent work by Australian historians has confirmed that this was so for most of the 20th century.

The Intergovernmental Panel on Climate Change (IPCC, 2013) recently advised that the world is facing a 2°C rise in temperature and is also facing increasing levels of atmospheric CO₂ as a consequence of human agency. Australia contributes more proportionately to these outcomes than it should. Both pieces of evidence are cause for concern. Each presents massive challenges. To try to respond to both could be seen by some as futile. This article is founded on an optimism that some kind of coordinated or collaborative response to them must be attempted.

In earlier times, the world experienced higher temperatures and higher CO₂ levels, but they occurred before human life as we know it. We cannot draw on human experience to temper our response to these challenges. The models we have developed to understand the behaviour of the environmental systems within which we live are robust yet not finely enough drawn to provide location-specific 'solutions'. We must work from first principles in the hope that what we have learned from our observations of the world's ecosystems can help us understand how they work, how they are being transformed as they respond to the challenges and stresses we collectively impose on them and what we must do to collectively modify those challenges and stresses if we want to save ourselves. It would be best if we simultaneously endeavoured to respond to the challenges.

Corresponding author:

Patrick Troy, Fenner School of Environment and Society, ANU College of Medicine, Biology & Environment, Linnaeus Way, The Australian National University, Canberra, ACT 0200, Australia.

Email: patrick.troy@anu.edu.au

The reality is that human societies are at different stages of development and understanding and have different capacities to respond.

The evolution of the various forms of social organisation and culture we see in what might be described as ‘urban life’ has not been accompanied by any strong sense of a limit to growth. Each form of social organisation has evolved with little recognition that their impact on the local or world environment could overwhelm the ‘natural processes’ that occur at either level. Nor has it given us a sense that we might, as humans, have ‘equal’ rights in or obligations to both the local or world environment.

Definitions

In 1987, the Brundtland Commission of the United Nations defined ‘sustainable development’ as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (World Commission on Environment and Development (WCED), 1987). Articulation of the concept of sustainability occurred at a time when there was increasing concern over the stresses being observed in different areas of the natural environment arising from economic and social behaviour, and recognition that there was a need for a collective response to manage and/or reduce those stresses to avoid irreversible damage.

The word ‘sustainability’, however, is freighted with a number of complex meanings. It has been used in many pieces of legislation but has little practical purchase in the way public affairs are conducted. It appears to mean whatever the speaker/listener wants it to mean and is, therefore, in danger of being disregarded.

Paradoxically, *sustainability* is a word that should be understood as going to the heart of human survival or at least to the survival of the urban mode of living in Australia. Initiatives to give effect to the concept of ‘sustainability’ in public policy are often described as being directed to *mitigation* or to *adaptation* both of which are in danger of becoming ‘cheat words’ of politics. They are often used in public debates to convey the impression of action, but neither usually implies a fundamental challenge to the actions and processes that created the stresses on the environment identified as the subject for mitigation or adaptation, or most critically to sustainable processes.

The evocative phrase ‘wicked problems’ has been used to describe the difficulties we face in trying to respond to the challenges we, collectively, have made for ourselves in trying to make amends for our behaviour. The originators of the term, Rittel and Webber (1973), listed ‘ten distinguishing properties of planning type problems’:

1. There is no definitive formulation of a wicked problem
2. Wicked problems have no stopping rule
3. Solutions to wicked problems are not true-or-false, but good-or-bad
4. There is no immediate and no ultimate test of a solution to a wicked problem
5. Every solution to a wicked problem is a ‘one-shot operation’
6. Wicked problems do not have an enumerable set of potential solutions

7. Every wicked problem is essentially unique
8. Every wicked problem can be considered to be a symptom of another problem
9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways
10. The planner has no right to be wrong.

The listing of the properties of ‘wicked problems’ might be seen as a counsel of despair.

The urban challenge

While many of the problems being faced by our modern cities are ‘wicked problems’, little energy has been applied to defining them. We have behaved as though we are taking part in a gigantic Mad Hatter’s tea party. Lewis Carroll’s (1865) surrealist allegorical is a useful summary of the way we have exploited and managed the resources available to us. The problems we begin to recognise arise out of the pursuit of economic and social objectives and behaviour in many areas of life by civic agencies that assumed no directive, regulative or critical role. We have behaved as though it matters little how much stress we create on local or distant environments, as if we can always ‘move on’ to the next seat at the environmental ‘table’ disregarding the ‘mess’ we have made.

An essentially Australian extension of the allegory is Norman Lindsay’s (1918) *Magic Pudding* in its ‘cut and come again’ character suggesting that there was no end to the providence. Carroll and Lindsay were writing in more ‘innocent’ periods before the environment became a major concern although each was drawing attention to fundamental aspects of modern society. How far we can take Carroll’s allegory in explaining the popular belief that we have no need to protect the environment or Lindsay’s view that there was an endless, painless source of wealth (the pudding) is a matter for reflection.

In *Social Limits to Growth*, Hirsch (1978) pointed out that there was little evidence that the mode of production/consumption favoured by developed nations not only did not lead necessarily to a higher level of satisfaction but that it was accompanied by an increase in inequality. Hirsch was critical of the view expounded by the ‘Club of Rome’ that there were physical limits to growth and its impact on the natural ecosystem but preferred to explore the notion that there were social processes at work – primarily through ‘the market’ – that would ensure that the ecosystem collapse presaged by natural scientists would be averted. This comforting view has prevailed even as more evidence of the increasing temperature and higher levels of atmospheric CO₂ accumulates and is thought to be reflected in the increasing perturbations in regional climates including shifting rainfall patterns, high winds and high temperature events. The enshrined belief in the efficacy of market mechanisms to solve all urban problems, including environmental stresses, has assumed the characteristics of the often criticised kinds of institutional and technological path dependencies identified with various infrastructure investments.

Smith (2013) highlights the problems of over-consumption and excessive demands on ecological systems by focusing his critique on the politico-industrial economic system. Smith argues that it is the open-ended nature of market-based economies that is the fundamental source of the stresses we place on the environment and that this is unsustainable. Judt (2010) does not explicitly take up the issues of the stresses placed on the environment but offers the view that we can, indeed must, develop a new way of exploring social issues without placing a blind faith in the market. In this, he argues a more optimistic case for social democratic reform than Smith but shies clear of suggesting resort to what might be seen as authoritarian measures imposed on the community. This appears to be a fear of those who believe in the efficacy of the market yet fail to recognise that the power of money may be ultimately as restrictive as authoritarian solutions.

When we identify environmental problems as ‘wicked problems’, we are saying that they are complex and may not be capable of being categorised comfortably in any particular discipline. Or, probably more importantly, solutions to such problems may well be sought under the umbrella of several social and economic processes. What appears inescapable is that success in addressing climate change issues depends on a measure of socially agreed limits on total consumption. Only after such limits, informed by the science of climate change, are established can we accept the efficacy of the market. There may still, however, be a need for absolute prohibitions on particular forms of consumption where they threaten the integrity and operation of the ecosystem.

The situation is now so critical that we can no longer indulge in the luxury of semantic dispute. We must face the reality of the impact of challenges to the environment. Those who do the most damage must accept a moral obligation to do more to redress the wrong they have done. We simply cannot wait for everyone to act in concert before anyone takes action. It would be a morally powerful position for Australia to adopt a leading role in pursuing sustainability.

Although some participants in the debate over climate change have challenged the validity of the argument and even denied that it is occurring, the weight of evidence from the ‘science community’ is that it is. Mackey et al. (2013) identify the most advantageous strategy that might be followed in mitigation programmes. They point out that while CO₂ emissions from land-based activities have made a significant contribution to atmospheric CO₂, the greater source of such emissions is the burning of fossil fuels.

Some have argued that land remediation programmes such as tree planting would be an effective mitigation response. Mackey et al. (2013) accept that such programmes can have only a small mitigation impact. While they may have some benefit in regional areas they do not address the ‘urban aspect’ of the source of climate change.

Securing sustainability inevitably raises trans-boundary issues. It will be difficult enough in nations like Australia in which each State enjoys a high degree of autonomy to achieve common purpose. It will be more difficult in large groupings of nations at different stages of economic development. We nonetheless must strive to secure common purpose. In this case, ‘example’ may be a powerful influence. There is a limited range of ‘sticks and carrots’ to achieve such an end but if we adopt Judt’s (2010) optimism about the need for and character of social democracy, we still have a chance to secure a human future.

Climate change – An urban problem

The kinds of economic activities we pursue, the kinds of materials we use in constructing our dwellings and other buildings, the way we move, in and between our cities, the levels of comfort we expect – indeed, the way we live in our cities leads to high levels of fossil fuel consumption that is the proximate reason for the climate changing increase in levels of atmospheric CO₂. Although there is wide variation in the levels of energy consumption among different members of a given urban population and between different urban populations, the total production of CO₂ is increased by the number of people. These two features of the source of CO₂ immediately pose problems for mitigation policies and programmes.

A programme designed to reduce CO₂ levels could be constructed by policies to reduce the total and rate of increase in population, but this would pose significant social challenges. While there are currently extremes in the levels of consumption enjoyed by different individuals and groups, it is also unlikely that policies to accentuate the division between them would be successful. Natalist policies designed to slow down the rate of increase in population will not be sufficient. Policies designed to ensure a decline in the total population will be extremely difficult to formulate and will take some time to have full effect and also achieve popular support. Policies to reduce the demand for energy ‘expensive’ modes of living and kinds of economic and social activities may offer the most efficacious opportunities and are more likely to be easily defined as ‘urban responses’. An important aspect of mediation policies is the lengthy response time of the ecosystems they are designed to affect. This means that the social compacts constructed to effect a reduction in levels of atmospheric CO₂, for example, would need to last for some time. Such policies and programmes would, of course, have to be designed to respond to the problem of ensuring that there was a more equitable access to the ‘good things’ of life. Those who currently consume less may expect that they have some ‘right’ to improve their lot, whereas those who currently consume more than the average may see that as their ‘right’.

Moral challenges

In any accounting of moral responsibilities, Australia must accept that it has not been a good model for others to follow. As one of the leading ‘polluting nations’ in the sense of our consumption of energy and production of CO₂, it has done more than its share of damage to world ecosystems. It would be timely for Australia, a nation highly ranked under the World Justice Project – Rule of Law Index (Agrast et al., 2012–2013), to provide moral leadership.

There are at least two ways this could be accomplished:

- The first would be to engage our universities in research to explore the ways in which our production and consumption of goods and services leads to increased consumption of energy and CO₂ production.
- The second is that we should develop a national discussion on how we systematically pursue policies and programmes designed to reduce our energy consumption and production of CO₂.

An important element of both responses would be a searching discussion of the distribution of wealth and consumption and the mechanisms of production and reward that may inhibit the development of a social democratic response to challenges to the environment. A primary focus in such endeavours must be in exploring the structure, function and form of our cities to identify the ways in which we build and operate them affects their efficiency, their equitable nature and their resilience – what we might call their *sustainability*. What increases the sense of urgency is that in most of our cities, initiatives are being taken to change the form and nature of development on the grounds that we need to do so to reduce environmental stresses. State and local governments are pressing to increase the density of urban areas out of a belief that doing so will make cities more sustainable. It is claimed that increasing density will lead to reduced water and energy consumption. The physical determinism of the programme is compelling but is unfortunately not supported by research evidence of behaviour.

A way forward: A sustainability project

As a practical matter, the sustainability of our urban centres should be nominated as a new National Priority area for the allocation of research resources by the Australian Research Council (ARC), as Australia's pre-eminent provider of resources for research. This would be accomplished within the prevailing conventions and processes of review and academic independence. Such an initiative would communicate a sense of urgency that the very sustainability of our urban life was at risk. In this, the term 'sustainable' does not and should not admit to degrees of sustainability. It describes a necessary equilibrium point that must be reached to secure the future of human society not only to enhance the present but to protect the future from the present. A practice is either environmentally sustainable or it is not.

Focusing on sustainability of the environment is a transformative project to transform our society, how we behave and who we are. An ARC-funded research programme summarising the evidence of the relationship between population density and energy consumption is urgently needed. Rather than simply taking the built density as the 'dependent variable', it is most important to explore the relationship between population behaviour and energy and water consumption. Public authorities have jumped to the conclusion that dwellings with large gardens use high volumes of water and that it is 'obvious' that the way to reduce consumption is to reduce the allotment size. Apart from being an 'unscientific' way of approaching the problem of water consumption, the policy initiative assumes that the current method of harvesting, storing and using potable water does not need review. It does not allow for changing personal consumption patterns including changes in gardening practices to reduce consumption. This would be a 'national project' to explore the nature of our urban system. It would be a project to invest the word 'sustainability' with meaning.

How would we achieve the required transition from the present competing 'egocentricities' of the university system? How would we engender a spirit of productive competition and engagement not only of our leading universities but of our industries and institutions of government? The ARC has overseen and managed a significant

transformation in the various disciplines in Australian universities to explore and organise the production and dissemination of knowledge. The specialised knowledge developed in disciplinary ‘silos’ is acknowledged internationally as of high standard. The drive for excellence has, however, led unfortunately to a loss of the ‘generalist’ and a reduction in support for interdisciplinary research.

Although the new Minister for Science has indicated he will be more involved in directing the ARC’s research, this organisation needs a mandate grounded in the social sciences to provide a strong basis for linking ecological and social justice objectives. Without changes to social values, institutions and the behaviour of individuals and groups, there is little prospect of the changes necessary to secure the future of growth and development in accord with the capacities of the ecosystems on which society depends.

Failing a focus by the ARC, it is possible that the new citizens’ Climate Council could provide a platform to articulate such an argument and in so doing encourage the kind of social inquiry needed to challenge the current orthodoxy.

While it is difficult, we must develop a planning system that is integrative. It must be pragmatic in defining the challenge to develop the knowledge base and the community’s understanding of the consequences of its behaviour to create a more optimistic approach to the resolution of wicked problems.

There is an implicit assumption in contemporary debates that the present size, form and structure of our cities are basically sound, requiring only small changes to make them ‘sustainable’. The challenge then may be seen to have two separate, but connected, elements:

1. The notion of ‘interdisciplinary’ research;
2. The consequences of the pursuit of the present dominant paradigm of the organisation of society and its economic and social behaviours on its sustainability.

Interdisciplinarity

I have argued that research on the notion of sustainability must be multi-disciplinary and central to attempts to identify priorities for public policies designed to make the society more sustainable. This is not to ignore or dismiss the specialist knowledge developed within the disciplinary silos of each of the disciplines. It is a recognition that to retain the specialised knowledge in the formulation of public policy, scientists and social scientists engaged in trying to address sustainability might need to find ways of accommodating to different views in articulating programmes to reduce unsustainable activities.

In the process, they could be expected to develop the ‘weighting’ needed to be applied to the different areas of knowledge to formulate balanced policies and programmes. The ‘weighting’ given to different areas of knowledge in formulating programmes will change as our knowledge develops.

This will be difficult because it must overcome the difficulties experienced by multi-disciplinary research in an academic environment (within universities and in national agencies such as the ARC) in which rewards, recognition and legitimacy as well as

authority are strongly determined by the discipline ‘silos’ with which most academics are identified.

Sustainability

We cannot jettison the research in individual disciplines, but it is important that we develop a research capability and strategy that is based on the larger more inclusive notion that sustainability goes to the heart of the question of the survivability of the human species.

Given that there is a limit to the resources the community has available to pursue issues of the common good, the question is ‘How do we design a research agenda to produce the greatest effect on our society to make it sustainable?’ This is a dilemma that has plagued all those who attempt to shape or plan a course of action to improve the common good.

What is clear is that the notion of sustainability, meaning the ability of the natural systems to sustain a population of humans, deserves a degree of primacy in setting the research agenda. Unless we can secure the future of human society within the limits of the complex suite of natural systems all other concerns are irrelevant.

Research into individual aspects of personal or collective consumption is important. However, there is a need to establish a research and education programme that identifies priorities in the production of knowledge in the different domains of Australian society and in the development of strategies to increase community adoption of policies and behaviour to produce a sustainable outcome. We do not need new priorities in the production of knowledge, but we do need better ways of articulating the problems to be addressed: the issue is not one of research capacity but clear articulation of the questions to be researched.

Visions for sustainability

Part of the difficulty in responding to the challenge of sustainability is that there is no easy way to assign relative priority to various initiatives. We may believe that it is socially more desirable to ensure that citizens share the community’s resources more equitably. But little advice is available to determine how we might achieve such an outcome harmoniously, nor are we advised how achieving more equitable consumption will increase social sustainability.

We must still ask whether Australia is a just society. By some accounts, it clearly is not. Equally importantly, we are required to ask ourselves whether it is sustainable. That is, whether the present level and kinds of consumption can be sustained without crippling effects on the natural systems that ‘constitute’ the nation. At present levels of consumption, it clearly is not.

The question then becomes ‘How can we make it sustainable yet more just?’ This a far harder question to answer because there is a wide disparity among individuals and groups in Australian society in their nature and levels of consumption. Coming to terms with the total level of consumption is something on which we can expect a high level of

agreement, but when we ask about its distribution, we raise questions that for some considerable time the answers have been strongly disputed.

The cleavages in our society are grounded in just such contentions. Those that 'have' have not generally been open to the view that the community 'pudding' should be equitably shared. Often their first response has been to argue for increase in the 'pudding' size, implying that it will thus be easier for those who have little to then have more. This argument for 'growth' is itself a large component of the pressure on the various ecosystems making them unsustainable. The proponents of growth have for the most part not supported arguments for a more equitable distribution or access to the 'good things' of contemporary life. Indeed, they have tended to argue for and construct policies to deliver differential rewards.

Addressing this would mean identifying the causes of inequality and its effect on the sustainability of Australian society, and producing arguments, and possibly advice on programmes, designed to reduce it. However challenging, it is important to carry out the research to see if it is possible to produce a more equitable society that also reduces the total stress on the various ecosystems while making society sustainable.

A problem in sketching a research and development strategy is that the 'territory' has been captured by focussing on issues of 'adaptation' and 'mitigation'. Adopting such language means implicitly arguing that it is possible for human societies to change, so that they are not troubled by changes to the environment. The debate based on adaptation has not established limits on the extent to which human societies can operate in environments that are hotter and/or have atmospheres that have higher levels of CO₂ than is currently experienced. Some part of the focus on 'adaptation' has explored issues such as rising sea levels and the consequential need to protect specific settlements but does not appear to have given much emphasis to the processes that led to the rising sea levels in the first place. Thus 'adaptation' may be a misleading focus.

The second term, 'mitigation', may also be misleading. At its best, it simply implies putting off the fateful day when the stark reality of the way our behaviour creates unsustainable stresses on the environment. It is a term most often used as a way of temporising in political debates over alternative courses of action to reduce or eliminate behaviour that is environmentally destructive.

Although adaptation and mitigation are often presented as alternatives to fundamental reviews of social behaviour, the reality is that they are not. In both cases, the language is used to obfuscate and to avoid exploration of crucial issues such as equity or of the way conceptions of property rights might need to be reviewed.

The first step might be to try to reach agreement on the primary forces that most prejudice the sustainability of society. National priority research, funded within ARC guidelines, could provide the matrix of scientific neutrality agency within which the considerable sources of knowledge and abilities of the research community could be brought to bear on urgently exploring, what we might think of as the 'meta' question of 'sustainability'. The current forecast of likely 2°C higher temperatures in the near future introduces a sense of urgency in the need for research into how we might best work to slow down or reverse this trend, as well as into measures to encourage Australian society to change in the face of the prospect of such climate change. The challenge is to explore

the extent to which the dominant paradigm of a neo-liberal approach to questions of growth and to exploitation of natural resources is a primary cause of the stresses now experienced in our ecosystems. This would mean exploring the notions of economic growth and how the attribution of rights in real property affects the sustainability of society.

Such a research programme would explore the following:

1. The prospects of cessation or mitigation of processes that tend to increase temperatures in the urban areas;
2. Means by which urban areas can better manage the stresses such temperature increases imply;
3. Prospects for a significant reduction in the 'production' of CO₂ as a consequence of the manner in which urban areas operate.

This would be likely to involve investigation of drivers of demand: Two may be population growth and per capita consumption. All projections of the growth of urban populations indicate that under present conditions and economic behaviour, we can expect to see a significant increase in national and world populations. Under present levels of consumption, we can expect that the stresses on the environment will be massively increased – probably beyond the capacity of the world's ecosystem.

The World Justice Project (Agrast et al., 2012–2013) takes the view that all societies should enjoy a comparable level of justice and, implicitly, a comparable standard of living. Under present conditions, this would require significant reallocations between regions. Two options suggest themselves:

1. To seek a consensus on managing an equalisation of consumption between regions;
2. To seek consensus on managing a reduction in total population and how it might best be distributed between regions.

This might lead to a conclusion that there is a need to reduce the scale of urban areas as well as necessary changes to their structure and form to make them sustainable. It would be accompanied by a review of population policy that explored the stresses that ageing of the population would create as the societies adjusted to the need to reduce their total number.

Path dependency

One serious impediment to the development of initiatives to address issues of sustainability is the tendency to rely on 'physical' or 'technological' solutions. In many cases, the initiatives are limited by path dependencies, cultural, administrative and/or technological, that exist in many of the agencies that provide the services, the excessive use of which generates stresses on the environment.

We see this in the agencies that provide energy, water services and transport services. Initiatives to transform urban areas by increasing their density in the hope that doing so

will reduce environmental stresses also owe their perceived potency to cultural path dependencies created in critical planning agencies.

The highly centralised structures of many administrative institutions, public and private, also tend to foster and accentuate the inefficiencies that result from highly centralised urban centres.

The dominant social paradigms that govern the rhythms of society, its administration and the allocation of scarce resources, are as potent as any commitment to physical or engineering practices or precepts in limiting the options we might pursue in seeking a sustainable future.

All these processes and institutional arrangements tend to compound the challenges to the environment. They all raise major public policy questions and may contribute to processes of institutional redesign to develop structures more appropriate to the pursuit and management of sustainability.

Government for sustainability

The 'Sustainability Project' should be designed to develop a conversation with and understanding of and by the larger community. Part of the effort to make the society sustainable would be focused on producing advice on how research into sustainability might be important in framing new approaches to the environment that might include regulations or legislation to affect change. Any research strategy should be constructed on the assumption that it is an iterative process. It is unlikely that any 'solution' proposed would be 'the last word' on the issue but might need to be revisited in the light of new knowledge or understandings of the preparedness of society to act on proposed ameliorative programmes.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

References

- Agrast M, Botero J, Martinez J, et al. (2012–2013) *WJP Rule of Law Index 2012–2013*. Washington, DC: The World Justice Project.
- Butlin NG (1964) *Investment in Australian Economic Development 1861–1900*. Cambridge: Cambridge University Press.
- Carroll L (1865) *Alice in Wonderland*. London: Macmillan.
- Hirsch F (1978) *Social Limits to Growth*. London: Routledge.
- Intergovernmental Panel on Climate Change (IPCC) (2013) Report overview. Climate change 2013: the physical science basis. Working group 1 contribution to the IPCC 5th assessment report, Summary for Policymakers. Available at: <http://www.climatechange2013.org/report/> (accessed 2 October 2013).
- Judt T (2010) *Ill Fares the Land*. New York: Penguin Press.
- Lindsay N (1918) *The Magic Pudding*. Sydney, NSW, Australia: Angus & Robertson.
- Mackey B, Prentice IC, Steffen W, et al. (2013) Untangling the confusion around land carbon science and climate change mitigation policy. *Nature Climate Change* 3 (May, corrected August): 552–557.

- Rittel H and Webber M (1973) Dilemmas in a general theory of planning. *Policy Sciences* 4(2): 155–169.
- Smith R (2013) Capitalism and the destruction of life on earth: six theses on saving the humans. *Real-World Economics Review* 64: 125–151.
- World Commission on Environment and Development (WCED) (Brundtland Commission of the United Nations (1987) *Our Common Future*. Oxford: Oxford University Press. Available at: <http://www.un-documents.net/ocf-02.htm> (accessed 30 October 2013).

Author biography

Patrick Troy has worked as an engineer in the private sector and in all tiers of government, as a senior administrator with the Australian Housing Corporation (1984–1992) and Australian Housing Council (1995) and as a consultant to UNESCO and the OECD on urban development, administration and environmental issues. Since 1966, he has held various professorial positions at the Australian National University. From 2003 to 2007, he was convenor and then patron of the State of Australian Cities Conferences. He is currently Adjunct Professor Urban Research Program, Griffith University, and Visiting Professor, City Futures Research Centre, Faculty of Built Environment, UNSW.