

Submission to Sustainable Cities Inquiry, Standing Committee on Environment & Heritage,  
House of Representatives

Andrew Inglis, Architect, Oct 2003 1/47 11/07/03

## INQUIRY INTO SUSTAINABLE CITIES :

Submission by Andrew Inglis, Architect and Project Manager,  
IDEAS Group Australia ( *Innovative Design for Environment And Sustainability* )

This submission addresses many of the points of reference with particular attention to the adoptive processes.

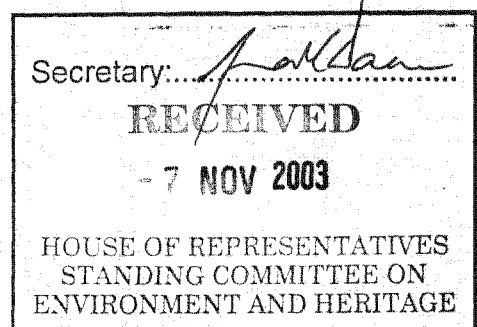
Andrew Inglis, B. Arch (Melb) 1976, Grad. Dip. Ed. (Community Stream) Melb 1976,  
Master of Engineering (Project management) RMITU, 1999.

The author is an experienced architect and project manager ( and sometime educator) with over 25 years work experience in large scale retail, industrial, commercial, institutional and urban projects including investigation to the building energy demography and urban energy issues of inner urban Brunswick in 1990 -92, work on the Sandridge City redevelopment project in Melbourne 1987-1989, completion of many inner-city energy efficient renovations and additions, foundation lecturer in architectural drafting studies at Wodonga TAFE , 1992-1995 and active member of the environment committee of the Victorian Chapter of the Royal Australian Institute of Architects 1996 - present. He co-prepared a detail questionnaire, subsequently taken up by RAI A national executive exploring why architects have failed to voluntarily implement ESD activities.

Andrew has prepared and presented public forums on urban energy and participated on behalf of the RAI A on a number of sustainability workshops held by the Victorian government and by the Building Commission Victoria and has been a subscriber to the Environment Design Guide since 1997.

He has active community interests and prepared relevant papers and research in the course of his recent studies focussed on ESD Project management.

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To achieve the purpose of this inquiry, namely to achieve sustainable cities by 2025 requires an effort no less prodigious or thorough going than some other comparable paradigmatic shifts

- Industrialisation ( and its concomitant urbanism)
- The model schools acts in Scotland developing a freedom of thought and action, and the later Society for the Diffusion of Useful Knowledge
- The Great Reform Bill of June 4, 1832 in England, improving suffrage and representation ( and easing considerable social agitation)
- the post Napoleonic "balance of powers" division of Europe in 1817 determining that continents fate for 150 years,
- the wholesale re construction of Central Paris, by Haussman achieved in little over 5 years in the 1870's ,
- the post WW2 reconstruction of Europe and reform / development of the manifest UN institutions including redevelopment of Germany & Japan
- or were we American , the Apollo space program
- Development of the Asian tiger economies including China, Korea, Taiwan, Malaysia and more pointedly India .<sup>1</sup>

Considering the deliberate and tardy political responses to environmental reform of successive Australian governments to the demands of RIO 1990, the Kyoto protocols (roughly one half elapsed of the time frame set for the inquiry's agenda) and in the face of numerous international conferences and public pledges by other countries notably the European Union and importantly structural changes and expectations in the global marketplace, one cannot be filled with wondrous hope:

The pre-conditions for achieving profound and thorough-going change are rare for Australia (and indeed the world at large): with the notable exceptions perhaps of the Snowy Mountains scheme, the effectiveness of organizational structure like the CSIRO and the wartime co-ordinated activity of governments and individuals during WW2 there are few precedents for the sheer scale, thorough-going need and permanent paradigm shift in behavioural and social psychology needed to achieve this stupendous task that must be successful.

The concomitant part of this "greening" of our cities may be the permanent and irreversible changes to the political landscape which may emerge through the success or otherwise of the process.

My cynicism stems from observing the slow march in urban events leading to the present sustainability agenda and the numerous setbacks which have accompanied it.

## BACKGROUND

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<sup>1</sup> Clive Ponting's "A Green History of the world" or Jared Diaminds "Gun's . Germs and Steel" both tell powerfully of the processes of cultural and historical development (& in many cases collapses), much of which becomes urban in character.

In many ways it is infuriating that debate is still needed after all the inquiries into ESD that went on in Australia in the 1990's (post Rio).

There is no lack of data or theory on Urban change, social development policy and specific sources on urban sustainability as practiced in a variety of forms.<sup>2</sup>

I am firmly of the view the issue is *Not* what are the technical and economic constraints to sustainability but rather obstacles in legislation and market reform and social behaviour.<sup>3</sup>

Furthermore Australia's history is rampant with examples of efficient rapid take up of technology and development of crucial niche roles. The "overland Telegraph", the proliferation of railways, the number of Australian maritime inventions and patents including the Torpedo, the flexible drive shaft (for boat propellers), the development of the pedal radio and the Flying Doctor service, aviation services and remote or "distance engineering", windmills and more recent take up of computers and mobile phone technology.

There has always been substantial investment in social infrastructure, in medicare, transportation, very early formation of an air force and a general predisposition to belligerence well in excess of our numbers.

Also there has been non intervention by our armed forces in our constitutional life, an absence of civil war (but not strife) and very healthy political development with genuine concern and compassion. (The secret ballot was for years called the Australian ballot). We have considerable engagement with Asia, all the more pronounced with the multi-cultural pluralism now emerging.

Rather the issue to hand in successfully implementing sustainable development is what real-politick constraints (which determine/ impact long-term frameworks) must be grappled with to optimize the chances of critical success.

Australia's highly urbanized society is directly explained by

- a geography of a large, arid country of fragile ecology,
- of few natural barriers or uplands, few navigable rivers,
- a difficult coast with unpredictable weather and large inter-city distances
- larger distances to trading partners and markets whether by sea or air
- a history of establishment by a colonial empire (Britain) wishing to maintain political control of the pattern of settlement after loss of North American colonies
- historical constraints on access to land (and pre 1880's agitation)
- early access to universal suffrage

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<sup>2</sup> On extremely useful and diverse source is the ENVIRONMENT DESIGN GUIDE Published since 1996 and periodically updated by BDP, which represents RAIA, AILA, PIA, IEA

<sup>3</sup> Canadian Psychologist Doug McKenzie Mohr's work "Fostering Sustainable Behaviour" is very pertinent to this fact Refer appendix one for further

- Close external control of entrepreneurial capital i.e. regulation of banking and externally determined forms of investment (British banks acting like the present World Bank!)
- The conditions of concentrated labour in cities led to a highly effective trade union history (and for a time broad public expectations of a socialist country with some nationalized industries)
- A developed market economy based on export of significant agricultural and mining surpluses
- constrained manufacturing and obstruction by overseas protectionist markets

It is little surprise that our cities are centralized, market focussed, but with low density and fragmented political and administrative systems and with land-use imbalances largely because most city growth has been in the period of significant car-use and sizeable home mortgages and generally limited access to capital has retarded the formation and spread of small businesses (SBE's).

The two major cities achieved predominance over their rival cities Perth, Adelaide, Hobart and Brisbane, from natural advantages in both geographical locations, as well as from past chicanery.

Melbourne being central to large agricultural hinterland districts with permanent water, agreeable temperate climate, abundant cheap flat land and relatively plentiful (If CO<sub>2</sub> dirty) brown coal all of which promoted industry and assisted its development as the major rail and road transport hub. Being in the direct path of the roaring forties meant sometimes rapid sailing journeys. Fortunately Melbourne was founded in an age before the from sail to steam and later oil powered shipping.<sup>4</sup>

Sydney, having satisfied the founding conditions of British needs for a penal colony had natural advantages of timber, a very secure natural harbour, albeit with the not inconsiderable barriers of the Blue Mountains. It is like wise central to the states administrative district and serves as a mercantile and administrative centre although more constrained by the harbour and radial rugged valleys.

The development of gold gave impetus to develop infrastructure from the urban "beachheads" as Daryl Jackson aptly termed them in 1990, consolidated the Melbourne-Sydney stranglehold from the late 1860's onwards. Centralization of political power and a shift from agrarian to city based industry cemented their pre-eminence.

**The upshot is the urban agenda is and will most likely always be driven politically by the dominant cities in this country. It would appear this will also be increasingly the case worldwide as the rate of city formation and growth**

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<sup>4</sup> As well explained in Geoffrey Blainey's "Tyranny of Distance" 1967 Tellingly Melbourne, tried some of the earliest chilled beef technology in the world to expand export markets.

**accelerates inexorably. Therefore how political power is exercised in those cities will be generally be critical to the development processes adopted.**

Put crudely the urban agenda in Australia which will determine most outcomes for the balance of the country is reflected in the criteria of who have most direct influence

- the location of major offices and headquarters, major sharemarkets and exchanges,
- major banking HQ's,
- the majority of universities,
- centres of excellence
- cultural and research facilities and learning
- the greater part of the electorate and parliamentary political seats, & political influence and fundraising
- location of major media organizations be it integrated TV, press, satellite, electronic and press journalism.
- Voluntary and charitable organizations
- Religious and specialist medical and hospital
- Market research and economic thinktanks

This is not withstanding Canberra's difficult balancing act as being the federal seat of power and locus of many cultural and governmental institutions : Federal Parliament, national library, Museum, War memorial, ANU etc. nor can one deny there are significant decentralized functions outside the cities such as much manufacturing and defence, critical mining, power and resource generation.

The reality is about 1/3<sup>rd</sup> of the population lies in 2 cities and about 4/5ths lies in the top 10 cities with about 4 percent of the land mass directly occupied. But their reach is far greater: 80% of the GDP is absorbed in Cities or in the resources used to service those cities.

The Vales of New Zealand <sup>5</sup> indicate the embodied energy of food is over 10 times the dietary energy content: the food eaten in an average Australian house represents 18.2 tonnes of CO2 a year compared with an annual 4.5 tonnes /year for a house built to roughly 1996 BCA standards (excluding most Victorian Insulation standards) or the 8.2 Tonnes annual greenhouse gas emissions estimated by Pears<sup>6</sup>.

The New Zealand per capita footprint is 3.49 Hectare or about 70 times the typical 500 square metre typical domestic allotment.

My crude estimates would suggest Australia footprint would be of the order of 5 ha per person. Present Australian energy consumption patterns for dwellings vary enormously, although last measured in detail in the "National Energy Survey in 1985-86 Census , published in 1987<sup>7</sup>. For Victoria in 1987 the average reticulated energy consumption (ie

<sup>5</sup> "The Ethics of Solar Energy: Why We Don't all Live in Solar houses" published in PLEA 1999, Vol2 pp 659 -670

<sup>6</sup> page 2, GEN13, May 1997, of the Environment design guide

<sup>7</sup> ABS National Energy Survey, Household Energy consumption 1985-86 Cat No 8213.0

gas or electricity) mean consumption was 62000 Mj for owner/ buyers and 39000 Mj for other occupancy and a mean expenditure of \$665. Mean Australian consumption (then ) was 39000, Mj representing about 3% or about \$449 of income of about \$28,000. The % of income for the lowest 2 deciles was 6.3 % to 5.5 % of a then income of between \$7800 and \$9100<sup>8</sup>

Clearly the urban footprints for cities are much greater than the land occupied. Getting agreement on the exact extent is almost impossible but the Vales figures suggest it may be ten or twentyfold the summed suburban allotment areas.

I for one am always aghast that Melbourne with typical densities of 16-19 persons per hectare has a population about one fifth of Berlin, yet occupies about 5 times the built area of Berlin. Our prodigious waste of resources has been a longterm scandal. Most other cities fare little better on raw density scores. The preponderance of detached houses only exacerbates energy consumption : as it was put in one conference " trying to improve detached houses is like trying to run a car with square wheels."

The process of ecological "footprinting" i.e. mapping the extent of impacts of cities (presently occurring) is still developing<sup>9</sup> but is implicit in the LCA (Life cycle Analysis) data on specific materials will confirm the reach of cities is many hundreds or thousands of kilometres, and when economic trading is considered<sup>10</sup> is part of a globalized interactive world community which watches and acts very quickly in response to technocratic, economic and political changes. These facts are self evident from the terms

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<sup>8</sup> Crudely incomes have slightly more than doubled in that time (excluding GST) but energy costs have risen proportionately to income: however technological improvements such as improved hot water services and energy efficient lights have caused some offsets, but net per capita consumption has still risen. This is partly explained by social fragmentation whereby the rate of household formation especially one and two person households is significantly higher than population growth: basically we have a lot of empty rooms in a lot of houses representing very inefficient social investment, yet the price signals to build appropriately sized affordable housing do NOT seem to be getting through to the public.

<sup>9</sup> Programs such as California Energy commission, Oregon Department of Energy and Washington State Energy Office, prepared with DOE grant **PLACE<sup>3</sup>S** (PLA nning Community Energy Education Environment and <sup>3</sup>Sustainability ) outlines a co-operative planning method by state energy offices how a community can develop an ecological and energy footprint program using geographic data inputs, energy data from billing companies and incorporating water use, and energy and job densities for a variety of mixed use built forms incorporating suburban, apartments and office and industrial. The process specifically aims to integrate decision makers and their constituents so decisions are better informed. The executive summary is attached , more detail can be got by accessing the referenced website . It does not attempt to supplant the services of competent architects, engineers, planners and other design professionals.

<sup>10</sup> ( as any reader of Jane Jacobs' (The Life and Death of Great Cities) or Lewis Mumford's the "City in History "will attest)

of reference already espoused and evident from anyone familiar with "pre ESD" urban development theories.

The essential issue *Not* addressed in the terms of reference is how will the political landscape alter with the greening of cities: one must profess considerable idealism not to believe that "increased responsibility of cities to reduce waste and economize scarce resources will not occur without effective and active political participation by extremely well informed political leadership in Canberra and in the various state and regional (local) governments the vagaries of political short-term agendas do not sit easily with "longterm renewal goals".

The difficulty of achieving federal constitutional changes and the present fiscal and rule-making legislative imbalances, along with the inherent structural inefficiencies our present political system entails means these lofty urban reform goals are probably unachievable without significant political overhaul: history is strongly against such a radical shift, assuming voting patterns over generations and changing city country/divide are strongly correlated. This in turn requires shifts in political allegiances and priorities, which are almost opposed, to the anarchic, shrewd and sceptical Australian electorate we have witnessed since the early 1970's.

To quote Raymond Aron <sup>11</sup>

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<sup>11</sup> Raymond Aron "Main Currents in Sociological thought 1", 1965 reprinted 1974, pp 258 penguin paperback, Harmondsworth. Aron outlines 3 main schools of political sociology. It is timely to review this discussion with the rise of green politics into mainstream political agendas.

"The first is the "French school" ex Montesquieu & Tocqueville: essentially preoccupied with politics whilst not disregarding the social infrastructure but stressing as liberals the autonomy of the political order.

The second, "The positivist/ industrial school" (Comptist) representing perhaps the majority mainstream opinion of today underplays the political and the economic in relation to the social. It places emphasis on the unity of the social entity, retains the notion of consensus as its fundamental concept and by multiplying analyses and concepts endeavours to reconstruct the social totality and is essentially optimistic, with some tendency to complacency. *(to the present author this seemed where the authors of the terms of reference would most comfortably sit)*

The third is Marxist, most successful in the world stage *(the book notably dates from the 1960's)*. This school ... .., combines an explanation of the social entity in terms of economic organisation and social infrastructure with a schema of evolution that guarantees its followers victory and the peaceful or violent elimination of heretics: having the catechist version necessary to any state doctrine or the intellectual version, the only one acceptable to great minds: it is supremely optimistic about the distant future and darkly pessimistic about the near future: it is utopian with a tendency to accept catastrophes as desirable in the long run and in any event, inevitable.

"To the extent there is state autonomy in relation to classes and class conflicts, one element in the evolution of societies is not reducible to the struggle of social classes. What decisions are made depends on who takes possession of the state."

The reason for lengthy quotation is to reflect on the shifts in political (& sociological) values, which have taken place since 1964. Marxism seems mortally wounded and the greening agenda does not sit easily with any one of the schools outlined in the footnote. Because all human beings are affected in many diverse ways by ESD ergo "green" issues should transcend party politics.

But consistent political and economic opposition to improving sustainability of cities has continued apace.

The question has to be asked : Why?

The question bears so profoundly because without substantial multi-party/ government of national unity approach : any partial agreement on the content and agenda of ESD process must suffer the shortcomings of specific party ideologies and rhetoric.

Indeed the very terms of reference of the inquiry and many of its presumptions imply specific stances, which could be attributed to specific political schools of thought. The terms of reference are couched largely in technical language, hence are not immediately accessible to the interested lay public: there is no clear definition of sustainability, so lets begin there.

Let's consider some definitions of **sustainability**

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These three schools of sociology, despite their differences of values and views of world history are all interpretations of modern society: reconstructing the social entity in their own way: each with an explanatory theory of the diversity of societies known to history; each inspired by moral convictions and by scientific hypotheses.: when we attempt to distinguish between moral convictions and scientific hypotheses, we do so with our own convictions."

The reason for lengthy quotation is to reflect on the shifts in political (& sociological) values which have taken place since 1964. The greening agenda does not sit easily with any one of the above schools, indeed because all human beings are affected in many diverse ways ESD ergo "green" issues transcend party politics, but consistent political and economic opposition to greening cities has continued apace. The question has to be asked Why? The question t bears so profoundly because without substantial multi-party/ government of national unity approach: any partial agreement on the content and agenda of ESD process must suffer the short comings of specific party ideologies and rhetoric. Indeed the very terms of reference of the enquiry and many of its presumptions imply specific stances which could be attributed to specific political schools of thought..



Sustainability<sup>12</sup> is a concept of development with 3 key elements: environmental sustainability, social sustainability and political sustainability.

### **1. Environmental sustainability: maintaining planetary systems and human life.**

- Protection of life systems and physical systems that help maintain planetary functions
- Sustainable use of nature and ecosystems.
- Satisfaction of present human and other species needs, and those of future generations.
- Legal and economic rules and instruments

### **2. Social sustainability : Equity**

- Solution for poverty
- Improved income distribution
- Satisfaction of human needs (not only traditional social expenditures or social policies)
- Gender equality
- Equality between regions within each country.
- Equality between northern and southern hemispheres.

### **3. Political sustainability: Citizens Participation and Democracy**

- Public participation and governance (every citizen as protagonist in deciding and implementing development)
- Human rights
- Democratic participation in political systems.
- Decentralization
- Indigenous rights and participation.
- Women and youth rights and participation.
- Legal rules and institutions for political sustainability

The terms of reference as addressed deal mainly in the first realm to the exclusion of the second and the third: this represents a very optimistic status quo position : in Aron 's terms the Comptist school of sociology: calling for minimalist change and "without shift in the balance of power"

The terms of reference make no reference to what decision making process will apply to the inquiry's findings, how differences of response or direction will be dealt with, who will

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<sup>12</sup> These are extracts from "The Dignity Line, Sustainability, Globalisation and Justice "a paper by Sara Larrain, Executive Director of the Sustainable Chile Program: presented at the North-South dialogue on Sustainability and Justice, Berlin, 23-25 October 2000, reprinted pp 18-31 in Global Greens, published by the Australian Greens and" the Green Institute" GPO Box 1108, Canberra City, ACT 2601, Australia Tel +612 6247 6305, Fax +612 47 6455, www.greens.org.au

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administer the process of "developing sustainability" nor does it address how this process will be equitably dealt with amongst 3 levels of government, whether pilot programs will ensue nor how traditional opposed interests more or less constitutionally enshrined will now marvelously work together for the greater good of all: .

It implies a naiveté of political wisdom, expecting respondents to deal purely with technical and economic issues of planning as if these have no political linkage: as if the electorate will be a passive consumer of political largesse; as if conflict and robust debate will have no place in "The Great Plan": nothing of necessary opposition, the role of healthy conflict.

This significant oversight suggests there is little commitment beyond information gathering; that social change need not be seriously addressed nor is it worthy of inclusion .

It is if Alice will simply get smaller and disappear whilst the Mad Hatter drowns Dormouse in tea: whereas the reality may be the Queen of Hearts has chopped off too many heads.

Enough of the negativity.

#### DETAILED RESPONSE

to the inquiry "Into and report on issues and policies related to the development of sustainable cities to the year 2025"

1. Environmental and social impacts of sprawling urban development.
2. Major determinants of urban settlement patterns and desirable patterns of development for the growth of Australian cities.
3. A "blueprint" for ecologically sustainable patterns of settlement, with particular reference to eco-efficiency and equity in the provision of services and infrastructure
4. Measures to reduce the environmental, social and economic costs of continuing urban expansion
5. Mechanisms for the Commonwealth to bring about development reform and promote sustainable patterns of settlement.

**ITEM 1 Environmental and social impacts of sprawling urban development.**

The impacts are aptly described in Lindsay Johnston's report please refer appendix 2.

Engwicht in DES16, p1, EDG Feb 1997 flags car related data from the Heidelberg Institute Germany where "even before getting on the road" the car has already produced 26.5 tonnes of waste and polluted 928 cubic metres of air (Whitelegg 1993b). He quote Appleyard's social (1981) as saying that people with light traffic in their street have three times as many friends and twice as many acquaintances as those with heavy traffic in their streets. To move a person by car requires 27 times more space to move them than by metro or light rail and 75 more times than if they walked. Of a typical suburban landsite where town planning codes require garages to be setback at or greater than "normal" setbacks this means setbacks of between 5 and 9 metres of a drive between 3.6 and 5.0m width in addition to a usually double garage of at least 6 x 6.5 m dimensions.

As a minima this consumes between 40 and about 75 square metres of a typical site, being between 20 % of a small inner urban site of 160 sq.m / unit and 15% of a 500 sq.m. site. Multi unit developments create significantly more efficient site yields but usually by more invasive site excavation, to form whole or part depth basements and requiring engineered retaining walls, drainage and somewhere else to deal with surplus soil: other downsides are almost complete annihilation of existing site trees and possible consequential effects to neighbouring properties, such as lowered local water tables etc.

Other solutions now being adopted by developers including above and below ground car stackers (costing between AUD \$6,000 to \$12,000/ car space compared to a typical Brick veneer 2 car garage costing \$40- 50,000 and multi storey carparks costing not less than about \$20,000/ carspace) (Data from recent developer projects in middle and inner Melbourne, 2002-2003)

Car dispersed cities, have the distance spread between destinations, require longer journeys, with extra traffic demanding more road space and greater amounts of money spent on infrastructure policing and social control: fines, courts, car registration, servicing costs without considering the "standing costs of cars and the dependence of governments on petrol and oil costs, world parity pricing and so forth etc." Professor Peter Newman's work at Murdoch University, WA confirms all this and more. Further he has confirmed the change of urban scale and traffic calming can produce enhanced lifestyle results. Reduced private vehicular transport allows reduced trip times, reduced loss of groundspace to roadmaking and increased recreational and pedestrian activities and community fraternisation without loss of amenity.<sup>13</sup>

Bush regeneration is covered in EDG notes  
DES 40 "Planting guidelines for Public Spaces", Nov 2000,  
DES 53 " Roof and Façade Gardens " Feb 2003  
DES 54 Water & landscape Design in Arid Environments

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<sup>13</sup> extract from DOPIE report of 05.02.1992 (NERRDDP EG / 89/790 Demonstration and monitoring of Local Government Energy policies, PWG Newman, et al Dec 1987,

The protection of urban trees and Bio diversity is critical and cannot be left to parland and Green wedges alone: some Melbourne municipal authorities require 2 – major trees be retained in proximity to major outdoor living spaces.<sup>14</sup>

**Item 2 Major determinants of urban settlement patterns and desirable patterns of development for the growth of Australian cities**

The determinants are reasonably and succinctly considered in my introductory remarks: the desirable patterns of growth require debate and discussion: the options range from how to deal with urban fringe as in Cities of Casey , Wyndham or Whittlesea in Melbourne to Decentralization and the promotion of regional growth as is now happening in Victoria.

Other useful retrofit models exist in such diverse programs as CERES in Brunswick, and the insulation and home improvement programs of the late 1980's early 1990's, to "Sustainable Suburbia, A case Study " by Alan Rodger and Roger Fay: developing a strategy for change at the neighbourhood unit scale showing self developed estate changes from 1991 to 2010 including house improvements, food production, improved envelopes. This in turn is some what similar to the "Street Farmers" studies in London of the 1970's.

**Item 3 A "blueprint" for ecologically sustainable patterns of settlement, with particular reference to eco-efficiency and equity in the provision of services and infrastructure**

A very similar "blueprint" was developed whilst I was Energy Design officer at the City of Brunswick: the funds for research were jointly contributed by the State Government of Victoria, Department of Planning and Housing (now Infrastructure) and the then Federal department of Primary Industry and Energy

For a number of internal, organizational reasons this policy document did not come to see the light of day although parts of it , or very similar approaches were taken up by the Victorian Department of Infrastructure subsequently.

The Brunswick model, did not become broadly public, because it was considered too contentious at the time, was not regarded as having sufficient market appeal and lacked cost benefit analysis to justify implementation. It also suffered by being co-joined to a housing policy, which sought land use changes in an area with surplus industrial uses, and thus suffered from additional political baggage. The model non-the less was based on field proven models used in Davis, California and was adapted to Australian conditions. It suffered from not having a simplified quantification tool which would indicate the effectiveness of a given design and allow informed consent to be easily

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<sup>14</sup> Frankly, recent experience suggests urban arborists are a "growth " industry, there will not be enough of them to go around given the level of disputation re trees now emerging at least in Melbourne

granted: this obstacle is still not satisfactorily addressed in any current planning assessment models.<sup>15</sup>

Further, there was widespread resistance within the professional town planners and amongst some of the then municipal staff. The proposal suggested over provision in design with higher density planning trade-offs to achieve positive planning outcomes whilst giving developers sufficient incentive to overcome financial and marketing concerns.

This report did not give political or market certainty to its funding sources. Additionally there was a critical change of federal government at that time. Although tailored for an inner-urban setting and whilst having some technical deficiencies it has much merit as an holistic approach as called for in the terms of reference.

*Comment (Because of the size of the file and the fact I have only a photocopy and not an electronic copy I have not included the details but can provide the same should it be required)*

A very full program has been developed by the Adelaide Architect Paul Downton including a community support mechanism Urban Ecology. Downton's approach has the great merit of being part built and tested by community exposure. Other smaller scale examples include the Sydney Olympic Village, a number of solar estates developed in Victoria, W.A., Canberra and Sydney and the detailed measurement of Solar and standard dwellings undertaken in Sydney by Solarch, (John Ballinger, Deo Prasad, Bill Lawson and others)

There have been a number of Utopian scheme developed including Green City near Geelong in the early 1990's.

The Urban Land Authority, Victoria with the SEAV developed a detailed paper<sup>16</sup> comparing traditional neighbourhood design with cluster and other suburban forms and found an optimum which could be utilized (Green Neighbourhood) This approach offers significant improvements without detriment and considers to some degree the co-location of employment near the homesite, it focussing mainly on low density approaches

An Environmental Assessment Impact approach is detailed in EDG note DES15 by Dr John Todd, February 1997

#### **Item 4 Measures to reduce the environmental, social and economic costs of continuing urban expansion**

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<sup>15</sup> SEAV Formerly Energy Victoria has First rate software which is presently the benchmark in Victoria and is required to be applied to all residential designs at time of Lodgement for DA or Planning application/ Approval (PA)

<sup>16</sup> Dunlop. A (1991) Energy Smart Lots: Designing Solar efficient Residential Subdivisions, Energy Victoria, Melbourne

Numerous examples are outlined in the Case Studies in EDG, ranging from remote pavilions to complex multi-storey residential towers and institutional buildings, including many of the Sydney Olympic developments.

Rewards for good design compliance should consider preference for use in building materials of the following energy reducing recommendations ( *Comment: what follow sare entirely the author's views* )

- Minimum 5 star rating for year round energy performance balancing winter heating , summer cooling / comfort and inter-zonal conditions, without reliance on user intervention
- LCA and embodied energy content not exceeding 35% of the embodied energy content of a 1996 typical house of 190 square metres ( you have to set a benchmark somewhere!)
- local materials with significant recycled content, manufactured less than 50Km from the site
- of materials of low embodied energy manufactured less than 50Km from the site
- of materials from renewables including straw rice and wheat chaff boards
- use of rammed earth and Pise manufactured on or within 50 km of site.
- Avoidance of fired materials except for critical wall and floor tiling in bathrooms, laundries and kitchens, limit use of masonry to cement block and avoid use of fired brick. Where fired materials to be used seek use of soft lime mortars, not the hard engineered high cement ratios which prevent effective cleaning and recycling of bricks promote use of sold pressed bricks and bar use of extruded bricks, discourage the use of salt glazes
- Use of non toxic and milk paints, lead free and child safe
- Avoidance of powdercoated or anodized aluminium and preference for clear finish aluminium , avoid use of aluminium sheeting
- Use of visible screw fixings for metal sheetings not pop rivets
- Use of timber framing in preference to metal except in extreme termite prone areas
- Return to suspended timber floor construction in preference to concrete slab on ground coupled with adequate internal built mass appropriate to the specific built design climate.
- Where precast commercial construction called for, preparation of detailed disassembly manuals , use of pre-assembled elements with accessible fixings ( precast planks and panels) , use of bolted NOT welded fixings, isolation movement joints
- Planning assessments of proposed buildings in terms of long-term jobs created, flexible future use, adequate ceiling heights to promote use of natural cooling methods
- Avoidance of fibreglass insulation, or fibreglass reinforcing
- minimize use of volatiles and outgassing materials
- use of timber glazing frames with external aluminium or metal sheaths,
- use of low –e single glazing
- extensive use of sliding or hinged shade shutters and devices to achieve significant external shading for the period Sept 30<sup>th</sup> to March 30<sup>th</sup>. (Such devices will also have

added benefits as bushfire reduction hazards where located in risk zones provided shutters are highly reflective and metal sheathed for durability)

These suggestions will undoubtedly anger many: they presume considerable market change will occur ( 85%5 of housing is currently Brick veneer, the above seeks to reduce this to about 30 % ) creating opportunities for other manufacturers, but industry will lobby hard for status quo to prevail.

Density changes to promote medium density housing using shared common walls of at least 10 square metres per unit and common floors of at least 40 square metres / unit can be readily achieved.

These should be in the context of an integrated planning program as released by the NSW Local government association <sup>17</sup>

#### **ITEM 5 *Mechanisms for the Commonwealth to bring about development reform and promote sustainable patterns of settlement***

Opportunities that can promote ESD development include<sup>18</sup>

- Long term financial viability
- Concern for user needs, and comfort and health within the workplace
- Interest in wider environmental issues and the need to set the green example
- Long-term flexibility in the use and provision of buildings, particularly with regard to energy costs and availability of affordable office space
- Perceptions of Improved market positioning through environmentally friendly design

The Mechanisms suggested for the Federal Government to consider include

- an independent semi government authority formed with enabling legislation
- not subject to Ministerial approval except in terms of financial / audit and prudential requirements in keeping with general requirements of government Fiscal responsibility.

This Organization, lets call it the Federal Urban Sustainability Authority (FUSA) might most usefully have a public role, analogous to the CSIRO but might also draw on the experiences of similar models such as the NCDC authority and be co-aligned with the AGO or more usefully the Snowy Mountains Authority which successfully integrated different State and federal agency interests in a project of national significance but with independence by charter as per the ABC (Australian Broadcasting Authority) .

It would require intellectual and economic leadership and rigour, and significant long-term funding *without* political strings attached.

Funding should be

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<sup>17</sup> Local Government and Energy Efficiency: Guidelines for Local government in the application of Energy efficiency principles in development (1992) 20 pp

<sup>18</sup> Che Wall DES 36, EDG p 1 remarks reported from Alan Rowe of Landsdown Estate Group (Edwards 1998)



- triennial with scrutiny by the senate and the Standing Committee on Heritage & Environment, Interim quarterly reports or exceptional reports might be needed in certain cases
- funding might be from general revenue or specific development imposts/ levies but hopefully funded in the longerterm by savings in offset greenhouse gases and direct savings in deferred energy and water infrastructure investments. This requires effective reporting/ liaison with respective state Energy authorities

It should have company like board of directors including staff representation, ministerial representation not exceeding 15 in number

- Representation from state and regional planning bodies and peak professional bodies such as PIA, RAIA, BDP, AIM, AIPM.
- Referring bodies such as and funding agencies including the Insurance and banking sector and a separate audit body as is expected of government Authorities.
- This body should function as analogous to the National Health and Medical research council.

FUSA would have responsibility for

- Managing and commissioning research on ESD issues through private and public sector bodies
- Grant allocations should be through a transparent, competitive forum and a % of funds should be earmarked e.g. 5% for specific community development projects
- developing and monitoring funding for ESD developments
- developing and maintaining an annual reporting structure , with a separate promotional arm with power to maintain and develop electronic and conventional digital and press output for promotional and research findings. A separate audit review report assessing effectiveness and recommending changes/ improvement would be a useful adjunct.
- in joint partnerships with State stakeholders
- FUSA requires a clear definition of powers to distinguish itself from other existing Federal powers. Any demarcations would need to be resolved before parliamentary draft legislation could be prepared
- These powers would include intervention and purchase/ acquisition powers where “ national interests” may outweigh local considerations.
- Possibly include briefing and monitoring “Major Projects” in joint models with state counterparts : this might require individual negotiations with each state because of the differing governmental arrangements around the country
- Longerterm possible constitutional amendments to state federal powers Re ESD obligations may be necessitated but a constitutional convention is probably the preferred model to be pursued to achieve a satisfactory outcome: because of recent ruckus re “republicanism” this may not be resolved by 2025

Other important matters are outlined in appendix 4 and in the analysis by Larrain particularly in the linkage between area improvement and the longerterm need to develop communities with work closely aligned to living: some of this has been evident in European energy design competitions and is exemplified in the first class design

response of the Netherlands International Bank (NMB) Headquarters in Amsterdam<sup>19</sup>  
and the recently completed GLC offices in London by Fosters & partners.<sup>20</sup>  
The UN Best practice Guidelines to which reference should be made

Town Planning remains an essentially a States matter under the constitution:  
Regional Planning as Mooted at Albury / Wodonga and the possible amalgamation of  
local government districts as happened under the Kennett Government in Victoria in  
1993 –1995 could be unique opportunities for Federal state co-operation.  
Similar essential ecological co-operation is happening with water use in the Murray-  
Darling basin: further co-operation is essential and Fusa might need to act as a marriage  
broker to any cross border authorities: this will require input probably at the annual  
Federal government / State premier's conference.

Other useful approaches include those of Victor Sposito, senior Fellow at Uni Melbourne  
and Project Director/ Manager Natural Resources and Environmental planning (DNRE)  
in EDG DES50, published November 2002 and Rob McGauran et al (2002) Urban  
Solutions – Propositions for the future Australian City" and Liveable Neighbourhoods,  
Government of WA, 2000

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<sup>19</sup> as outlined By William Browning of the Rocky Mountains Institute, publishes in  
Progressive Architecture 3, 1993

<sup>20</sup> Outlined in "London's Green Landmark", Sunworld, Vol 23, No4, Dec 1999 Contact  
Kate Harris or Elizabeth Walker on +44 171 738 0455

**ADDITIONAL INFORMATION HELD BY THE COMMITTEE**

**ATTACHMENTS TO SUBMISSION NO. 76**

**ATTACHMENTS, APPENDICES AND PHOTOGRAPHS PROVIDED WITH  
SUBMISSIONS ARE HELD IN THE COMMITTEE OFFICE**