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The Structure and Form of the Australian City: Prospects for improved urban planning

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Urban Policy Program

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Introduction

We come together to live in cities for a variety of reasons, but there are two fundamental forces that shape the way we live in them.

The first is that as societies increase in wealth citizens make themselves more comfortable. Historically they have done so by demanding larger dwellings and more differentiated accommodation. That is, they have not only sought bigger dwellings they have also sought to internally divide the space so that dwellings have rooms with separate functions. Bedrooms were separated from cooking areas, children gained bedrooms separated from adults, dining and living rooms were separated from other rooms, kitchens were separated off once better stoves were developed (Webber 2000), and so on. Special purpose rooms such as bathrooms and laundries were taken for granted as wealth increased. Improvements in plumbing and waste disposal were accompanied by incorporation of toilets into dwellings instead of them being separate structures some distance from them.

Households have not only sought more control over private indoor space they have also sought control over outdoor space in the form of private gardens or 'backyards' in which they pursue a range of activities including hobbies, food and horticultural gardening (Halket 1976). As wealth increased and more time was available for leisure people have also sought more public outdoor space in the form of parks and gardens, promenade areas and areas of assembly as well as greater circulation space. The engagement in sporting activities has also meant greater demand for outdoor recreation space such as playing fields and golf courses.

The second force is that as societies advance their citizens have always sought to travel where they wanted, at a level of comfort and security of their choice, when they wanted and with whom they choose. The level of income and wealth and their relatively equal distribution in Australia compared with other countries meant that accommodating these two basic forces resulted in Australian cities developing a distinctive structure and form.

To simplify this discussion these two aspects of urban areas are defined as follows:

- Structure - is the spatial relationships between cities and their services and activities. That is, whether the activities are arranged in linear relationships and are highly centralised, or whether the city is structured as an interconnected set of nodes around which development is arranged.

- Form - is the nature or density of development. All major cities in Australia are essentially low density, especially in their residential areas, although recently the city centres have been developed to high density.

In this paper I explore some of the ways in which their initial structure and form may now create problems for Australian cities, because their functions and the demand for and nature of the urban services available in them have changed, while they have simultaneously been subjected to large pressures as a consequence of the adoption of a variety of technologies developed since their founding.

Urban Structure

The original colonial towns were established on green field sites where there was no developed hinterland. The towns were simultaneously centres of political, military, administrative and commercial power and the locus of the energising force for development. As the population of each colony grew these towns grew into cities which dominated the whole colony.

The focus of development and power meant that in each colony only one concentration of urban development grew or was allowed to grow into a significant city. Sydney for example, was the centre of all power in the New South Wales colony. Even though Newcastle was a major centre of overseas trade early in the life of New South Wales, it was prevented from developing in a way that might have led to it share in the colony's growth or of challenging Sydney's dominance. Melbourne interests similarly hobbled Geelong's growth. Brisbane had no obvious potential alternative competing centre.

The following is an overview of the process of development in some of Australia's capital cities.

Development plans

Many of the towns established during the first half century of each of the colonies were founded with plans to guide their development.

In New South Wales Governor Phillip had ambitions for Sydney to become a great city but was largely frustrated in his pursuit of them (Bonyhady 2000), although his own inconsistencies may have contributed to the failure to achieve the plan. We may observe similar processes at work in Sydney today as major 'developments', inconsistent with metropolitan strategy plans, are initiated that have significant restructuring effects.

The topography of Sydney and Brisbane's sites made it easier for those with development ambitions to try to depart from central plans. Road and ultimately rail construction was easier to build along the ridges and spines near the broken waterways. As those cities grew, the way roads followed the spines created major traffic bottlenecks we now observe.

The founders of Melbourne and Adelaide had better fortune in laying out their towns in the sense that the original grid street system survived and was readily extended to cover what in each case became the metropolitan area. To some extent the sites of Melbourne and Adelaide - large flat plains - made it easier to comply with their plans. We should note however, that the construction of radial rail lines and highways overlaying the grid have reduced the advantages conferred by the grid road system in both cities.

Centralisation

From the outset Sydney was highly centralised. The centre of government, civil administration, military power, the law, commerce, finance, warehousing and manufacturing were located in the same place which quickly became highly developed, even congested. Melbourne and Brisbane followed similar settlement and development trajectories and had similar degrees of centralisation.

Although Perth and Adelaide did not start with the same degree of concentration between port and administration as occurred in the other cities, the concentration of government, civil administration, military power, the law and commerce and finance meant that they also quickly became highly centralised cities.

As cities grew and settlement stretched beyond walking distance, various forms of public transport were developed. Melbourne and Sydney were both provided with tram services - initially horse drawn and then ultimately mechanically powered. These services were initially provided to existing suburbs but they were extended in ways that facilitated the expansion of the suburban area along radial routes. The subsequent development of railways to service this growth, further extended the radial suburbanisation of the cities. Similar processes were at work shaping the growth of the other major cities.

In the post WWII period, Australian cities experienced a rapid increase in population largely from immigration fed industrialisation, but also from rural-urban internal migration. The latter followed the changes in farming due to mechanisation, restructuring of industries like flour milling and brewing, changes in railway technology, etc. The increase in urban population was accompanied by a rapid increase in motor vehicle ownership that facilitated a massive increase in the suburban reach of all the major cities. The development of the road system and the increase in the capacity of radial roads, later to be enhanced by the construction of freeways and tollways, further increased the centralisation.

The control by sitting interests of this incremental growth of all cities led to a high degree of centralisation that is reflected in their structure. In the early stages of growth this centralisation made it economically feasible to provide a range of urban services. The paradox, however, is that at some point in its growth each city reached a size at which the centralisation produced a high degree of inefficiency in operation. The obvious illustration of this is the inefficiencies that have developed in the transport system of each city.

Although only a small proportion of the workforce is employed in the centre of each city and only a small proportion of retail trade is conducted there, the transport systems continue to focus on the city centre forcing people who have no business there to travel through the centre thus adding to the problems of congestion.

Town planning

Adoption of modern town planning in all the major cities began to change the structure of the cities early in the twentieth century and sped up shortly after WWII when metropolitan planning schemes were progressively adopted.

The process of separation of industrial activity from residential areas commenced soon after settlement when activities such as tanneries and wool-scouring operations were separated from other urban activities. The concern over the injurious effects on the health or amenity of residents from effluents and smoke and other noxious and poisonous gas emissions, gradually led to a separation of industrial activities from residential areas.

Commercial activities were also progressively excluded from residential areas. By the early post WWII period this meant there was a separation of living areas from areas in

which activities were carried out that were regarded as injurious to health or the amenity of residents. A variety of social and economic pressures gradually reinforced this separation and excluded residents from multi use buildings. Changes in retailing and other commercial activities meant fewer households lived 'on site' of those activities.

Technological developments

The adoption of new technologies has wrought major changes on the structure of cities. Early forms of energy conversion led to high intensity factories and warehouses. This was especially obvious in Sydney where factories and warehouses were built on the harbour foreshores to take advantage of the easy delivery of coal to power their operation.

The adoption of small reliable electric motors transformed the organisation and processes of manufacturing. The adoption of developments in materials handling technology such as forklifts and the palletising of materials and products each led to demands for different forms of factories and warehouses. The rapid move away from cramped waterside industrial and warehousing sites to extensive new industrial areas on the fringe of the metropolitan areas in the process changed the structure of the city.

Subsequent changes in manufacturing including adoption of 'just-in-time' delivery of components and final delivery of products served to solidify those changes. These restructuring forces were increased by the adoption of new marine transport technologies, especially those related to the containerisation of cargoes and the development of very large bulk carriers. The close connection between shipping and the original centre of the city meant that the area around the docks was fully developed. Adoption of the new transport technology could not be accommodated on the existing harboursides. This in turn led to pressures to relocate or develop port facilities in new locations. All of the State capital cities have now been restructured leaving old port and dockside support areas to be redeveloped to new uses. The South Bank development in Brisbane and subsequent further riverside redevelopment is the prime local illustration of this process.

While the restructuring of the city resulting from the range of new technologies occurred, it did not always take place in the locations favoured.

Decentralisation

Town planning schemes introduced in the 1950s sought to capture some of the advantages of centralisation while minimising the disadvantages by fostering the growth of suburban centres. Initially these were planned to take advantage of 'natural foci' developed around public transport nodes. However, the vibrant new shopping malls that developed did so usually in locations selected because of their easy access by motor vehicle and with sufficient space to provide generous parking.

The decline of retailing in the traditional centres or 'natural foci' left many of them depressed and run down. The privatisation of public space that accompanied the new malls led to further decline of the traditional centres except in a small number locations that have been able to develop as recreational or tourist destinations.

A major reason this new 'decentralisation' within the metropolitan area did not deliver the advantages planned for the suburban centres is that there was little decentralisation of public administration and virtually no devolution of political responsibility. Residents continued to be forced to travel to the city centre for most of their dealings with government.

Urban Form

What became the traditional form of development of Australian cities grew out of recognition that early settlers had to fend for themselves to a large degree. Given that there was no established agricultural hinterland, settlers had to provide or grow much of their own food. Even convicts were expected to provide much of their own sustenance in the early days of settlement.

Allotment size

The early plans for the layout of towns which specified varying sized allotments recognised the need for self sufficiency. In Sydney, Governor Phillip proposed 60 by 90 feet allotments, Governor Darling specified half-acre allotments with buildings set back 20 feet from the boundary. The early attempt in Sydney to meet the needs of the merchant class was by building sizeable houses adjacent to their warehouses. By 1828 the demands of the elite for their own quarter were met by Governor Darling through the establishment of Woolloomooloo Hill as an exclusive suburb. The land grants in the new suburb ranged from eight to ten acres and grantees were required to build substantial villas. Within twenty years all of the grants had been subdivided into small parcels to the substantial gain of the grantees (Broadbent 1987).

In other areas:
- By the time Newcastle was settled some of the options had been closed off so one quarter acre was specified as the allotment size with main streets 100 feet wide plus two 10 feet footpaths (Jeans 1965).
- The Melbourne grid was laid out under the Colonial Secretary's instructions with allotments of half an acre (1 chain by 5 chain).
- Adelaide's initial plan envisaged 1-acre allotments, although later towns laid out in rural areas in the South Australian colony specified half-acre allotments.

The plan proposed for Brisbane was based on allotments of one-quarter acre with generous public squares and reserves and streets 92.4 feet wide. This plan was vetoed by Governor Gipps who felt that 'wide open spaces encouraged public disorder' (Laverty 1971). Gipps ordered 1 fifth acre allotments with streets of 66 feet except for Queen Street which was specified as 80 feet wide. The shortcomings that this 'mean' specification led to, quickly became apparent and is the root cause of many of the problems experienced in central Brisbane to this day. Part of the decision specifying narrow streets rested on arguments that in hot climates narrow streets were more congenial than wide ones. The same argument though, led to Newcastle streets being wider than those for Brisbane. In each case the proponents cited experience in India to support their decision but came to opposite conclusions.

As noted by Broadbent (1987) and Davison (1994), the aspirations of the early settlers from urban England (especially the middle class) for suburban villas, was given energy because land outside the town was still available as a government grant and rents in the town were high. Thus there was an incentive for people to build their own home outside the town. Another pressure was the fire danger that closely packed dwellings presented in a situation of unpredictable long dry periods. The regulations covering building construction were the same as those in Britain in the late eighteenth century.

The Building Act also encouraged suburban development by those who, for a variety of reasons, subscribed to the conventional view that suburban housing was healthier. The introduction of building ventilation regulations based on miasmatic theories of disease transmission is a good example of regulations which were adopted after disastrous epidemics but which were rationalised by reference to scientific 'evidence' and argument. The regulations had a major and persistent influence on the design and construction of housing. That is, regulations covering structural safety, fire and health aspects of housing all helped to enshrine suburban separate houses in their own gardens as the dominant form of housing.

Other colonies followed similar trajectories in the development of regulatory regimes in response to similar demands. A house with its own garden thus became the predominant 'national' form of urban development.

Domestic production

Once developed, the effect of this relatively low-density form of development was to enable successive generations of households to attain a high degree of self-sufficiency. Mullins for example argues that the extent of domestic production in Australia was largely responsible for the relatively high standard of living enjoyed by colonists in the late nineteenth and early twentieth century (1981a, 1981b, 1988).

More recently the development of large scale farming and food production together with improvement in the transport, distribution, marketing and storage of food reduced the attraction or need for domestic production. The cheap mass production of clothing and other household consumption items made household production less attractive.

The reduction in household size and increased participation of married women in the formal workforce meant that on the one hand the demand for domestic production fell, while simultaneously on the other, there was less 'domestic labour' available to produce the food thus led to a reduction in household production. These processes in turn led to reduction in the need for households to have large areas to support them.

Waste disposal

In the original settlements there were no centrally organised waste disposal systems. The original form of development however meant it was possible for households, especially those on 'suburban' blocks, to accommodate and manage most of their own wastes including human wastes. The size of allotments meant that households could dispose of their wastes 'on site'. In the inner areas of the cities, primitive human waste collection and disposal systems were developed which often led to the creation of 'nuisances' (Dingle and Rasmussen 1991; Lloyd, Troy and Schreiner 1992).

As the need for safe disposal of sewage became more widely recognised, a variety of systems were developed. The most efficacious and least offensive were systems relying on water as the transporting medium. Wherever they could be afforded 'reticulated' sewerage systems were developed. Once the system was developed all land holdings within reach of the sewer had to pay property based charges for the service whether connected to it or not. This effectively led to the connection of all dwellings and commercial undertakings to the sewerage system. In those areas beyond the drainage area of the sewer and where soil conditions were appropriate, water borne disposal systems were also developed. These usually relied on a 'septic' receiving tank into which all discharges were made. An allotment area of one quarter of an acre (approximately 1,000 square metres) was regarded as the appropriate size in most soil conditions to cope with the waste flows. Once reticulated sewerage systems were provided, the need for allotments to be on a 'quarter acre subdivision' was removed. The development of regular communal garbage collections from dwellings and commercial undertakings also reduced the need for large allotments.

We do not yet know what the long-term effect on ground water quality of this approach to the management of sewage effluent will be. This may become an increasing problem as the effluent stream increases and contains increasing amounts of complex chemical compounds including drugs to regulate fertility, hypertension, cholesterol, depression, antibiotics and a large array of chemicals used in industrial, commercial and domestic processes.

Water supply

Initially households made their own provision for water supplies. Wherever supplies of potable water could be drawn from reliable natural sources, they were. Households also built cisterns to collect and store water. However, cisterns provided a supply of water that was of uncertain quality and frequently found to be contaminated by fecal material. Cisterns were therefore considered a health risk and the subject of much criticism (Lloyd et al 1992). Households also installed rainwater tanks store rain-water collected from roofs. The original natural supplies often became inadequate or were polluted. In response to campaigns for publicly provided secure supplies of potable water, major cities developed reticulated water supplies.

The engineers who developed the systems had argued for an annual connection charge based on the value of the property serviced, plus a consumption charge based on volume used. The tariff policy of charging for the service on the basis of property value whether the property was connected to the system or not, led to the phasing out of rainwater storage tanks. Rainwater storage tanks were later made illegal on grounds that they were a hazard to health, although the initial argument against them was that allowing households to use them would compromise the financial viability of the reticulated service.

Suburbanisation

Generally the inner areas of Australian cities had allotments of one eighth of an acre although once they reached a size where they were no longer 'walking cities' smaller subdivisions were made in inner suburbs to cater for demand by low income earners for housing close to the city centre (Davison 1978). Middle distance and outer suburbs had allotments of one quarter-acre until the early post WWII period when allotment sizes

were reduced because the need to allow for domestic production, water storage, on site sewage management and on site garbage disposal had been removed.

The attraction of the suburbs was the attraction of the idea of a 'green and secluded neighbourhood' one where families could enjoy 'fresh air, a pleasant view and a shady garden' (Davison 1978, p144). Miasmatic theories of disease transmission reinforced this desire and regulations governing the design and construction of buildings, especially dwellings, enshrined this in the late nineteenth century (remaining in place for the next hundred years). By the turn of the twentieth century garden city ideals gained currency reinforcing the earlier ambitions of residents.

The egalitarian nature of Australian society and its high standard of living - together with the high level of home ownership, the belief that all residents could enjoy high standards of amenity and that there was space aplenty - reinforced the notion of the 'normalcy' of the form of development that Australian cities exhibited.

Recognition of the centrality of the separate house in its own garden to the aspirations of the overwhelming majority of the population and the view that this would breed a conservative constituency was the foundation of the post WWII campaigns of R. G. Menzies, Leader of the Opposition in the Federal Parliament. Under Menzies' leadership in the 1950s home ownership increased to a record level by 1961, at which level it was maintained until recently. This was a measure of the success of the first element of that campaign, although the assumption that it would lead to political conservatism does not appear to have followed (Troy 2000), nor has the recent fall in home ownership been accompanied by evidence of radicalisation of the electorate.

While changes in city form applied to new subdivisions in which reticulated sewerage services were provided in the site development phase, the allotments in older suburban areas remained unaltered until the early 1960s when flat developments began to occur in the inner and middle distance suburbs of some cities.

Changes in technology in industry and commerce not only had major restructuring effects they also significantly influenced the form of development to create extensive areas of low rise factories and warehousing.

The form of development in the suburbs gave Australian cities a general character unlike that of old world cities although it was not very different to the form adopted in other New World cities such as USA, Canada, New Zealand and South Africa (Jackson 1985).

However, we should note that as living standards increased, many Old World cities - especially in Europe - have experienced massive growth of suburban areas in which the predominant form of housing has been of housing with individual gardens. For example, London, Paris and even Moscow under Soviet control all illustrate this process.

Consolidation

In the early 1980s the notion of consolidation was adopted by State governments for three reasons:

1. As a way of increasing density, allegedly to save on infrastructure service costs (since the 1950s Federal governments progressively tightened funds for investment in

infrastructure, in spite of the pressures placed on the States by Federal immigration programs);

2. To reduce environmental stresses especially by increased public transport patronage; and
3. To increase housing choice.

Allotment sizes fell in both new and redevelopment areas (Troy 1996).

The change in policy was not buttressed by analysis of the uses to which households put their garden or backyard space at different periods in their life course. Nor was the policy supported by analysis of its likely effects. The net effect of the change in form resulting from the reduction in allotment size is now obvious in Australian cities.

However, the effect is not uniform, nor has it occurred in locations thought to best meet the policy objectives. Moreover, there is little evidence that higher density housing reduces demand for and therefore investment in infrastructure, nor is there strong evidence that increasing density necessarily leads to increased public transport usage or that it reduces environmental stresses. We note too that it has not greatly increased housing choice. The consequences of this change in urban form remain to be identified.

Urban Planning

The path dependency effects of the original decisions on the layout of the settlement of each colony and the subsequent decisions on the siting and layout of later towns have had a continuing effect on their structure.

The original and subsequent subdivision patterns developed around transport and access routes established and then reinforced the structural centralisation exhibited by Australian cities.

The urban planning system has been impotent in overcoming the limitations wrought by this element of path dependency. Consequently, when radical changes to their structure have been visited on cities by the adoption of new technology - especially in transport infrastructure - the rigidity of the planning and development control system has resulted in inefficiencies in the operation of the city.

The path dependency effects of the development of other infrastructure services have similarly led to inefficiencies as the cities have grown. We now see for example, how our commitment to nineteenth century conceptions of the way we deliver water supply, sewerage and drainage services has locked us in to an approach we now recognise is unsustainable. Yet we find it difficult to discover how we must adjust our behaviour, reduce our demand for them and the way we finance them.

The financial investment in major infrastructure services and the institutional arrangements created to develop and manage them, provides a brake that also prevents a rapid response to new technology, or short-term 'fashions' in economic or financial systems. These inhibiting forces may have negative effects in the way urban services are delivered.

Probably the most important path dependent effect has been the incremental extension and accretion of the centralisation of political, economic and administrative power. Path dependency is also enshrined in the rights and privileges codified and vested in private property.

The form of development has also been affected by similar path dependency. In part this flows from the durability and longevity of investment in housing. It also stems from the persistence of aspirations, expectations, conventions and ambitions of the population.

We have seen this in various periods in the stubborn resistance of people to attempts to change the city. We saw it in the 1930s in the resistance to 'flat' developments and we see it currently in resistance by communities to saving their suburbs from the effects of policies such as consolidation or densification (Lewis 1999). While the need for domestic production may have been reduced, households continue to demand a living environment where they can attain the privacy they desire, where they have the space in which they can pursue home based leisure activities, where their accommodation is flexible enough to enable them to accommodate visitors and children, and so on. The suburban form of Australian cities and towns was enshrined in them from their beginning and was not something arising out of the adoption of particular transport technologies at various times.

I do not argue here that path dependency is THE dominant effect in the trajectory of development of either the structure or form of the city, although it clearly is important.

Points of inflection and discontinuity in the development trajectory of a city may occur as a result of natural disasters, economic failure, major technological changes or the determined pursuit by governments of policies to change social aspirations and mores.

Some will argue that path dependency provides the framework for continuity, stability familiarity and security without which we would not have civilised life. While accepting that a civilised society does need such a framework the danger is that the desirability of continuity, stability, familiarity and security is often expressed as a defence of the *status quo*.

Some would claim that it is possible to so organise urban life that cities achieve economies in their operation and facilitate a democratisation of engagement while preserving the significant elements of their history. They would further claim that the structure of the city can be developed to serve these ends. When opportunities are seen for new business or investment the same appeal to continuity, stability, familiarity and security is not so much in evidence in relation to the form of the city. Defenders of suburbanisation may mount arguments based on these concerns but proponents of change tend to minimise their significance.

The recent history of Australian urbanisation provides a paradoxical commentary on the growth of Australia's cities. Although 'progress' has been seen in terms of the connection of dwellings to a variety of networked services that are highly centralised, the need for them to continue to be connected is now increasingly being questioned. The inherent inefficiencies of centralised systems have begun to lead to redirection of growth away from the centre. We do not yet have the development of 'Edge Cities' such as those seen in USA (Garreau 1991), but centrifugal forces that produced such outcomes

there, are evident in Australia. Pressure on resources, especially on water supplies and of pollution loads on receiving waters are increasingly leading to reconsideration of the way urban water supplies are provided and maintained. The population size of all major cities has reached the point where, at current levels of consumption, the limits of water supplies have been reached.

Initial responses were to pursue pricing policies designed to reduce consumption. More recently governments, local and State, have encouraged the local capture, storage and use of rainfall as a way of meeting demand for water. Simultaneously, governments have explored the possibility of re-cycling wastewater for domestic and commercial use to reduce the pressure on resources and to reduce the discharge of wastewater to the oceans, rivers and bays in or near the cities.

We begin to see similar initiatives in the energy industry with the development of small scale local power plants and with the advances being made in development of local energy conversion including photovoltaic conversion that has the potential to make dwellings and other urban activities energy independent. We already have IT and telecommunication services that are freed from the constraints of buried copper networks.

The fall in family size coupled with changes in education policy, has led to dramatic changes in the size and distribution of schools, especially primary schools, that were the cornerstone of neighbourhood planning in the early post war period. Densification policies have also had a major influence on the distribution of schools as the 'yield' of children from higher density households is significantly lower than was expected when the policies were adopted. Taken together these changes in the distribution of schools have had a significant influence on the structure of Australian cities. Children are more likely now to have longer trips to school than they did, moreover, the trips are likely to be across the 'direct line of travel' offered by public transport thus requiring more parental transport than they hitherto did.

Changes in work — loss of permanency, increase in part-time jobs and increasing workforce participation of women — have all resulted in household members having different workplace destinations.

The effect these changes might have on the structure and form of the city is yet to reveal itself. What is clear though, is that it may be rational for households to try to remain at a location because the attempt to minimise travel times or costs for one member of the household or pattern of employment may be offset by increases experienced by other members.

The rapid inflation in real estate prices over a relatively long period appears to have fuelled the pressures to change the form of development in large areas of all major cities. Increasing prices of housing appear to be leading to rapid increases in mortgage burdens that in turn may lead to further downward pressures on family size. These pressures may also lead to emigration of families with children or households of childbearing age seeking to reduce housing costs by moving to lower cost towns. The consequences for changes in the structure of our cities of falling family size and such migration are yet to be revealed.

The paradox is that as pressures mount for housing to be made more energy and water independent and as communication systems have less need for a 'wired' network Australian cities could become less dependent on highly centralised systems. We also note that in spite of these trends our cities become more centralised than ever in terms of the concentration of the built form and in the process they are made more vulnerable.

The 11th of September in New York is now commonly cited as evidence of this vulnerability but I think the problem is more acute in the way we supply infrastructure services and in the way our cities may be exposed to natural catastrophes.

Our own experiences with disasters such as the cyclone that flattened Darwin, the earthquake that hit Newcastle, the 1974 floods in Brisbane, the failure of the gas supply to Melbourne, the corruption of the water supply system in Sydney, the failure of the sewerage system in Adelaide and the failure of power supplies in Auckland, Sydney and Queensland, not to mention the daily seizures in the road transport systems especially in Sydney and Melbourne, but also to some degree here in Brisbane, all provide lessons in the failure to develop appropriate planning.

Conclusion

The path dependency of the conventional form of housing may well be the saving of the city in terms of reduction in environmental stress, because its adaptability and flexibility gives it the capacity to adapt to new approaches to the delivery of urban services. Planning has always been passive and negative and the real influence on city our cities has been that of the infrastructure services. The processes of change we are now observing in our cities are likely to reinforce the influence on city development of the urban service agencies that are more analytically inclined and which must act to preserve their own economic stability. This is not to say that planning is a waste of time, but it does suggest that until we develop planning institutions that build on rigorous analysis and open identification of the trade-offs to be made and rely less on fashions they will continue to be impotent.

The first thing that is needed is for governments to create planning authorities that recognise the strength and legitimacy of the fundamental forces shaping the way citizens live and want to live in the city. The challenge will then be to find ways of resolving the tensions that arise in balancing those forces with the imperative to create cities that are more sustainable.

The second step is the need to develop a public debate in which citizens are encouraged to explore issues beyond the short term alleged benefits of particular development proposals in articulating the kind of city they want to live in. This is not an easy task and requires a new way of engaging with the public so that the process is not simply captured by noisy articulate minorities. But it is also not the manipulative controlling consultative process that many planning authorities engage in.

I do not have any concrete proposal to make about the nature and remit of the planning that is needed in any city except to say that the planning system must reflect the range of interests and concerns that are in the community. This means that it must be location and culture specific.

There is one danger in all this on which I would offer one piece of advice: it is important to resist the visiting 'snake oil merchant' who claims to have THE SOLUTION to the urban problems of Brisbane – or any other city for that matter. Whether they propose consolidation and the downsizing of dwellings, priority for public transport to the exclusion of private travel, the introduction of privatisation or the rigorous market pricing systems for urban services. They all claim to be able to solve the PROBLEM. In doing so they hope that citizens will forget that: there is *always* a simple solution to every complex problem…..But it is *always* wrong!

I suggest that we accept that our cities are complex highly adaptive systems and that we need to develop planning systems that are not physically deterministic but are built on the notion that in accommodating the basic forces operating in our society we must find appropriate ways of giving them acceptable physical expression.

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