

Urban Form, Sustainability and Lifestyles

User Perspectives on the Life of 21st Century Cities

Presentation for
14th AESOP Congress
Brno, Czech Republic
19-22 July 2000

by

Jan Scheurer, PhD Candidate
Institute for Sustainability and
Technology Policy (ISTP)
Murdoch University
Perth WA 6150, Australia
ph +61 8 9360 6188, fax +61 8 9360 6421
j.scheurer@central.murdoch.edu.au
<http://www.istp.murdoch.edu.au>

Abstract

Metropolitan development at the turn of the millennium no longer shows clearly prevailing trends in terms of spatial settlement patterns, social structures or urbanites' individual lifestyle choices. Instead, cities offer an ever-increasing patchwork of physical urbanisation models as well as social and lifestyle opportunities, presenting a major challenge to valid interpretations and visions as to what directions urban development is taking. The need for policymakers and concerned community members to instigate a viable path along the sustainability agenda adds a further dimension of complexity to the issue.

This paper examines a variety of approaches and models to link the present urban experience with the requirements of a more resource-efficient and liveable urban future. It is emphasised that for a process of sustainable transformation to be approached successfully, it is paramount that contemporary physical and socio-economic trends in cities be viewed from a user perspective. The spectrum of lifestyles manifest in a city, the forces that shape them and distribute them spatially and socially, hold important clues to understanding the functional realities of the contemporary metropolis and their further evolution.

Introduction

During the transition from an industrial to an information-based society in Western cities in the past 25 years, and exacerbated by the transition from a socialist to a market economy in Central and Eastern Europe, the paradigms guiding urban expansion and development for much of the 20th century are now severely out of tune with the contemporary array of forces that shape cities.

It has become obvious that unlimited growth to the benefit of society as a whole meets formidable environmental, social and economic constraints in an age when humanity's aspirations, activities and problems are increasingly global in character. Near-universal employment has given way to a highly fragmented labour market with inherent uncertainties and disparities, while cultural change, female empowerment and economic necessity have made it less and less acceptable to uphold the traditional division of labour between genders in the nuclear family.

Neighbourhoods once built for the convenience of women and children at home have gradually become dormitory suburbs largely devoid of daytime activity. Simultaneously, small units of one or two members have emerged as the dominant household form in cities, supported by falling birth rates and a growing share of aged people. This is associated with a stronger presence of conspicuously non-family oriented lifestyle groups - alternative, hedonistic and pragmatic - which have special requirements of consumption, cultural diversity and practical convenience to be met in their residential and working environment.

This new plurality has established local social milieux to determine the character of neighbourhoods rather than earlier distinctions largely by income, extending to professional, cultural and ethnic networks and supported by a long-standing popular backlash against top-down planning regimes, enabling more user participation in shaping the evolution of specific urban areas. These milieux have also become valuable incubators for the urban economy, particularly in innovative knowledge-oriented sectors that have taken the lead from industrial mass-production to top the value-adding pyramid and generate new employment. They have contributed to project a more hybrid and heterogeneous picture of urban space over the 20th century model of functional segregation, increasingly blurring the line between private life (which is carried back into the urban arena to some degree) and work (which is making inroads into the home following trends to more telecommuting, contract work, self-employment and the life-long need for further education).

The implications of these trends on the future form of cities, however, are contested. This is particularly true with regard to the sustainability agenda, which mandates cities to reduce their flow of material resources while simultaneously increase their liveability. In the following, we will discuss a number of models of sustainable urban development relevant for cities in the developed world under the set of societal conditions described above, and explore their potentials and limitations. Experiences from concrete examples of neighbourhoods in selected cities where residents have made conscious lifestyle choices in tune with the sustainability agenda and created a more liveable urban environment in the process, will conclude with the optimistic note that despite analytical confusion on the part of urban research, positive changes on the ground remain feasible.

Sustainability and the Urban Future - Four Approaches

The Decentralised City

The Decentralised City can be characterised as a continuation and intentional exacerbation of the trends that led to suburbanisation in many Western cities mostly during the post-war period, such as aspirations for home ownership, relative spatial independence and self-determination, growing demand for residential space in both quantity and quality. It seeks to overcome the inefficiency and high resource use inherent in present dispersed cities through further dissolution of centrality to strengthen local and sub-regional autonomy, which is also connected to a vision of relative social equality where home ownership and tenure over land are accessible to all population groups. The model can historically be traced back to Frank Lloyd Wright's 1940s concept of 'Broadacre City' and is nowadays promoted, for instance, by a group of Californian researchers around Gordon and Richardson (1989) and Troy (1996) in Australia.

The position can be related to sustainability mainly in two ways. First, there is the expectation that land values and housing costs will be kept moderate and spatially balanced in the absence of development constraints, which translates into high standards of living at greater affordability. Second, in providing individuals with sufficient space and control (ownership), they are encouraged to pursue urban ecology goals within their own backyards, without relying on a local community and its possible vagaries. It is furthermore maintained that dispersed and decentralised settlement patterns reflect a market preference, and any attempt at tampering with this force would be an authoritarian intervention stifling economic efficiency and individual freedom.

Such, the Decentralised City assumes a 'weak' stance on sustainability (see Zethoven 1991, Jacobs 1999). It accepts a relatively high level of resource use built into the idealised urban form in exchange for the equity and economic gains associated with the model, and points to the empowerment of the individual as consumer/reproducer to adapt to more resource-conscious lifestyles and (eventually) choose technologies of lower environmental impact (like home-based renewable energy systems, backyard ecological food production and zero-emission vehicles). While car dependence is inevitable, hope is expressed that ongoing decentralisation will disperse present concentrations of destinations (jobs, retail, services, recreation) and thus substantially shorten average journey distances.

The model, however, appears to come at a macroeconomic cost that is commonly disregarded by its proponents. In current practice, substantial hidden subsidies not included in consumer prices for housing and land make their way into the overall bill for low-density development at the urban fringe (Kenworthy and Newman 1992). Whether markets would continue to favour peripheral low-density living even where they do if such costs were made explicit remains doubtful. In addition, it is often unclear whether households' decisions to relocate outward are sufficiently informed to take into account all implications and potential inconveniences of suburban living, or whether they merely express a 'second-best' solution, reflecting a lack of supply of attractive and affordable housing nearer to the centre (Hesse and Schmitz 1998).

The same inability to find optimal locations under contemporary market conditions may hold true for land-intensive industries commonly driven to suburbanise by land value pressures (Kahnert 1998). Market demand for peripheral urban growth, then, may be more fragile than it seems if and when policies are in place to internalise societal, macroeconomic and environmental costs, and to overcome market distortions. It is fair to say that this less than confident outlook into a future of increasing resource constraints

and socio-economic pressures has begun to discredit traditional suburban development even in its regional strongholds across North America and Australia, providing momentum for developers, planners and the community to take the exploration of alternative urbanisation models seriously.

The Smart-Growing City

The Smart-Growing City, as the terms suggests, is essentially a paradigm applicable under growth conditions, and can herein be clearly distinguished from the more 'European' models of the Compact City and the Dispersal-Pragmatic City (see below) which are primarily based on stable (or even declining) urban populations. Much of its rationale is derived from the sustainability shortcomings experienced in traditional suburban development. Such, quality public spaces under local stewardship and a variety of housing forms are included to combat social isolation.

A mix of uses and flexibility for functional change are set to increase economic opportunities. Walkable catchments and the availability of user-friendly public transit are expected to break the dominance of the car. Respect for and gentle integration of environmental features within the urbanised area, at par with their preservation outside of it, intend to contribute to a better balance between the natural and the built environment. These goals are being pursued by allowing stakeholders to have a greater say in the process of urbanisation, which - in the suburbs of New World cities at least - is traditionally a highly corporatised and top-down undertaking. Smart Growth principles were first elaborated by planning and design practitioners - Calthorpe (1993) in the US, Morris and Kaufman (1996) in Australia, just to name a few - and have recently made substantial inroads into government programmes and development codes throughout the New World.

It can be argued that the Smart-Growing City occupies an 'intermediate' stance on sustainability (see Zethoven 1991) - it embraces the concept of growth as paramount for the wellbeing of the city, but regards it as imperative that this growth change fundamentally in character. There is a clear expectation that these proposed changes will have synergistic and self-reinforcing effects on the welfare of communities and improve liveability across the board. Similarly, it is anticipated that Smart Growth will, over time, relieve society from the external costs of suburban development (see above) and 'pay its own way' when considering its impact on the urban economy and, more specifically, government budgets (Benfield, Raimi and Chen 1999).

The same, however, cannot necessarily be said for the field of resource use. While Smart Growth poses no insurmountable barriers to housing development that encompasses urban ecology approaches aiming at resource savings or mobility management, outright encouragement of such solutions or behaviour is not an integral component of the concept either. Rather, the focus is on the incorporation of passive measures needed to enable more sustainable lifestyles without guaranteeing them: such as energy-efficient building design but every opportunity for the user to maintain energy-intensive behaviour patterns, or the availability of non-car transport modes but continued generous supply of parking and roads.

More bluntly, Smart Growth attempts to dish out the 'carrots' of ecological transformation while confident it can hold back the 'sticks' and still achieve tangible outcomes on the path to urban sustainability. Only ongoing experience can tell whether this attitude will suffice.

The Compact City

The Compact City describes an attempt to bring the qualities of historic European and Middle Eastern cities that have evolved during many centuries of low resource use and relative social stability back into contemporary city building. Key factors in this process are the existence of a high-quality public realm, which users can appropriate for productive and recreational, formal and informal activities alike (Jacobs 1961, Gehl 1987, Feldtkeller 1994), increases in activity density accompanied by constraints to outward urban growth, and substantial shifts from automobiles to non-car modes of transports. This conundrum is supported by evidence from existing cities of relative compactness that show significantly lower energy use and more balanced travel choices than their more dispersed counterparts (Newman and Kenworthy 1989, 1999, Apel, Lehmbruck, Pharoah and Thiemann-Linden 1997). To varying extent, Compact City philosophy now characterises urban development practice in many European cities and is also applied at the regional level in the model of 'Decentralised Concentration' (Holz-Rau 1997).

The Compact City's main claim to sustainability consists in its objective to preserve and rehabilitate open space through concentration of urban development at high densities, and the substantial savings in travel demand its proponents claim will result from such practice. This is linked to the belief that the Compact City, like the Smart-Growing City, can unleash immense synergistic potential with regard to social and economic interaction in these multifunctional, walkable environments and thus be a direct contribution against socially undesirable processes of alienation, segregation, lack of opportunities and urban crime.

The Compact City's stance on sustainability can be characterised as 'deep' or 'strong' (Zethoven 1991, Jacobs 1999). Its stated aim is to fundamentally reconfigure present settlement and transport patterns without necessarily tying this process to the coincidence of economic or population growth, or even tuning in to the grain of the market. Ultimately, the Compact City would overcome the phenomenon of suburban dispersal through functional enrichment and densification of some areas and de-development of others, as well as the dominance of the automobile, the use and ownership of which would face increasing physical, legal and financial restrictions and be reduced to a supplementary transport mode in a system built on walking, cycling and (mostly rail-based) public transit. As the argument goes, the result would be both enhanced resource efficiency - from transport effects as well as from 'economies of scale' when implementing energy efficiency technologies into compact development - and enhanced liveability from a more versatile and adaptable public realm.

The main dilemma facing Compact City paradigms, however, is their applicability under present urban development pressures and conditions. Restricting urbanisation to high-density nodes and corridors is liable to price out land-intensive uses, which would invariably seek to subvert the regime by locating in the least protected 'undevelopable' (read cheap) areas - unless, of course (and as expected by some Compact City proponents), they eventually disappear altogether.

There is an implicit presumption of profound changes in market demand here, which from a contemporary perspective and depending on the political weight afforded to it, may appear either unrealistic and powerless, or prescriptive and authoritarian (Jessen 1997, Sieverts 1997). This extends to the field of transport as well, where the jury is still out on the question whether the travel savings observed in existing compact cities really materialise when translated into a strategic program to transform dispersed cities (Hesse and Trostorf 2000). Is it possible that the Compact City, in a reversal of the Smart Growing City's attitude (see above), shows considerable determination to apply the 'sticks' of enforcing more sustainable urban structures, but largely neglects to focus on the

'carrots' that would make them palatable? For this reason, the Compact City may well fail to convince planning practitioners, and the public at large, of its scarcely disputable relevance in theory and its claim to collate a compelling a realistic image of the future city.

The Dispersal-Pragmatic City

The model of the Dispersal-Pragmatic City, at a glance, does not fundamentally differ from the sustainability goals pursued in the Smart-Growing City and the Compact City. Again, it is intended to enhance the complexity of the urban fabric, and the synergistic opportunities it provides, through functional enrichment whilst alleviating socio-economic problems in the process. A higher degree of local self-sufficiency in precincts or suburbs thus transformed would make proximity-based interaction more relevant, resulting in travel savings and potentially the empowerment of communities.

In contrast to both the Smart-Growing and the Compact City, however, the Dispersal-Pragmatic City focuses on the existing urban periphery as the primary laboratory of change, and is reluctant to accept the relevance of historically motivated reurbanisation paradigms for the majority of contemporary planning tasks. Its main proponents include a network of German researchers around Sieverts (1997, 1998) who coined the term of the 'Zwischenstadt', but there is now also discernible influence on planning policies, for instance in Holland (Priemus 1999).

The Dispersal-Pragmatic City's stance on sustainability can aptly be classified as 'intermediate' (Zethoven 1991), since it aims to achieve sustainability goals in full respect of current market trends, economic pressures and lifestyle choices in the process of urban development. In fact, it derives much of its justification from the perceived failure of Compact City ideals to account for these fundamental conditions, and attempts to liberate the pathway towards sustainability from what is seen as 'ideological baggage', resulting from an excessive focus on the virtues of the pre-industrial city. In line with its emphasis on peripheries where the boundaries of urban and rural dissolve, it is conversely propagated to deconstruct the distinction between the built and the natural environment and work towards fine-grained integration of the two. Among a closer connection of productive and reproductive activities in residential areas (such as energy generation and food cultivation) this is likely to put a limit to the kind of densities seen as desirable in the Compact City.

There is, however, no clear picture of future urban form in the Dispersal-Pragmatic City. Rather, the model is open to include elements from any of the other paradigms discussed here, which would then coalesce throughout a metropolitan region in a collage-like fashion. The importance of constantly improving and rebuilding existing urban fabric and - not least in the face of declining public funds for infrastructure investment - the need to rely on networks already in place are stressed.

User Perspectives on the Life of 21st Century Cities

URBAN FUTURES APPROACH	THE DECENTRALISED CITY	THE SMART-GROWING CITY	THE COMPACT CITY	THE DISPERSAL-PRAGMATIC CITY
Origin	North America, Australia	North America, Australia	Europe, Australia	Europe
Sustainability Attitude	Weak	Intermediate	Strong	Intermediate
Settlement Pattern	<ul style="list-style-type: none"> • Dispersed • Low Densities • Decentralised • Coarse-Grained Patchwork of Monofunctional Uses 	<ul style="list-style-type: none"> • Dispersed and Compact • Hierarchical Densities • Polycentric • Fine-Grained Functional Mix 	<ul style="list-style-type: none"> • Compact • High Densities • Concentric and Polycentric • Maximised Functional Hybridisation 	<ul style="list-style-type: none"> • Dispersed and Compact • Varying Densities • Decentralised and Polycentric • Functional Mix both Coarse- and Fine-Grained
Rationale	<ul style="list-style-type: none"> • Assumed Market Preference • Land Value Harmonisation • Greater Sub-Regional Autonomy and Job-Housing Balance 	<ul style="list-style-type: none"> • Better Local Communities • Mitigation of Social Problems • Revival of Local Economy • Enhanced Travel Choices • Greater Job-Housing Balance 	<ul style="list-style-type: none"> • Opportunities for Synergy between Uses • Land Savings • Assumed Travel Savings • Building on Strengths of 2000 Years of Urban Evolution 	<ul style="list-style-type: none"> • Assumed Market Pressure • Urban Reconstruction Most Needed at Periphery • Greater Functional Balance Across Region • Enhanced Local Opportunities
Transport Paradigm	<ul style="list-style-type: none"> • Automobile with Technical Improvements • Flexible Public Transit Supplementary 	<ul style="list-style-type: none"> • Fixed and Flexible Public Transit • Walking and Cycling • Taming of Automobile, but no Restriction 	<ul style="list-style-type: none"> • Fixed Public Transit • Walking and Cycling • Automobile Restrictions Essential 	<ul style="list-style-type: none"> • Fixed and Flexible Public Transit • Walking and Cycling • Automobile Restrictions where Feasible
Policy Recommendations	<ul style="list-style-type: none"> • End Planning Interventions • Empower Individuals • Regulate Limited Assets through Pricing 	<ul style="list-style-type: none"> • Strengthen and Create Local Centres • Apply Growth Boundaries • Establish Strategic Public Transit System • Improve Housing Choices 	<ul style="list-style-type: none"> • Revitalise and Densify Urban and Regional Centres • Apply Growth Boundaries and Dismantle some Sprawl • Improve Strategic Public Transit System • Restrict Car Use and Access 	<ul style="list-style-type: none"> • Take Development Pressure from Centres • Functionally Enrich Periphery • Reconcile Urbanised Land and Interspersed Nature • Build Mainly on Existing Infrastructure

Table A: Overview of Urban Futures Approaches

The lack of imagery may work to the detriment of the Dispersal-Pragmatic City as a perceivable urban development paradigm, while simultaneously offering sufficient scope to pursue and implement sustainability policies at a local level, at an appropriate pace and in collaboration between the set of stakeholders relevant in each case, without there having to be a metropolitan-wide 'grand plan' in place as a prerequisite for successful transformation.

Dispersal-Pragmatic policies, then, can incorporate both 'carrots' and 'sticks' where appropriate and produce a broad diversity of outcomes and approaches on the ground. Whether this actually happens, however, will largely depend on political decisions at all levels - particularly in (continental) Europe and Australia, where government control of the planning agenda remains relatively firm and where the extent of self-regulation in urban development that can be observed in most US metropolitan regions is unlikely to occur.

Making Changes - Urban Sustainability in Practice

Resource Efficiency from a User Perspective

Innovations in residential development with the aim of reducing resource use have taken two contrasting approaches to meet their objectives (Gestring, Heine, Mautz, Mayer and Siebel 1997). The technological approach attempts to equip buildings with appliances and construction techniques that minimise their demand for energy or water, and are designed to function independently from user perception or understanding of these technologies.

The social approach attempts to influence residents' awareness and behaviour to save resources through adjustments of their lifestyles, and to instigate technological innovations according to their own needs and capabilities. It has been argued that while the technological approach has appeal from an engineering point of view and is more susceptible to government policies with their legal and financial tools, it is questionable whether the goals of a sustainability agenda taken seriously can be achieved entirely without a contribution of the users by changing some aspects of their everyday behaviour (ibid).

This debate corresponds to the urban futures paradigms described above insofar as the different approaches make varying reference to technological and behavioural aspects of sustainable housing.

- In the Decentralised City, there is broad confidence that resource efficiency will be achieved through behavioural changes and consumer preferences for less energy-intensive products and services, without however providing explicit support for comprehensive technological solutions through a public or private body with sufficient capitalisation and expertise to do so.
- Conversely, in the Smart-Growing City resource savings are induced by technology and urban form, but leave adjustments in behaviour almost entirely up to the users' decisions.
- The technological approach is also prevalent in the Compact City, but here substantial behavioural shifts are equally significant and anticipated through strong institutional, financial and physical discouragement of resource-intensive lifestyles.
- In the Dispersal-Pragmatic City, a greater freedom towards applicable pathways to more resource-efficient housing exists since small, local steps can sometimes have a

significant impact. Some examples from European urban peripheries may illustrate the scope of possibilities:

- In the neighbourhoods of Hyldebjerg and Gadekædet in suburban Copenhagen (Denmark) groups of resident volunteers organised a local recycling yard, optimised and expanded existing waste management systems towards more user-friendliness (ie. brought glass and paper collection to every front door). The initiative was received positively by both the municipalities and the housing society, which in turn made efforts to assist other neighbourhoods to instigate similar programmes.
- In the new district of Vauban, Freiburg (Germany) future residents were invited to participate in the planning process and encouraged to form small owner co-operatives that would design and build groups of houses or flats to advanced energy standards required by the municipal building code. Residents, builders and architects were able to contribute and broaden their expertise, and the project has had a discernible effect to proliferate regional knowledge on sustainable building.

Communities and Liveability

There is a long-standing tradition in community-oriented housing in European cities, tracing back to the first housing co-operatives and share-owned associations at the beginning of the 20th century. Many of these early innovations enabled residents to gain access to services and facilities, which would be out of reach financially or location-wise unless supplied on a shared basis at the neighbourhood level. There is also a strong potential for increased casual interaction and social activities in neighbourhoods designed around such shared spaces and facilities. This is in marked contrast to the post-war planning tradition, when growing household affluence and autonomy in tandem with a sense of mistrust in the benefits of community life - particularly in countries where this had been abused through totalitarian systems in the past - led to a high degree of individualism and alienation in the relations between the (private) home and the (public) city.

Urban life has always been characterised by the dichotomy of the competing needs to relieve the individual from reproductive work and to create a living environment that reflects and supports an individual's or a group's basic values and aspirations. As such, a residential neighbourhood and the surrounding city are both a 'machine', offering services to its inhabitants' convenience and facilitation of everyday activities, and a 'home', functioning as a target for self-expression, invigoration and creativity (Häußermann and Siebel 1987, Gestring et al 1997).

In the Decentralised City, the strong functional and spatial segregation between the 'home' concept, which is largely confined to a household's private domain, and the 'machine' concept, which starkly dominates the public arena, is largely upheld. In the Smart-Growing and the Compact City, 'home' and 'machine' functions are more interwoven and overlapping, allowing residents to move reproductive and creative activities into the public realm and thus influence its form and character (if within certain confines of functional and legal rigidity). In the Dispersal-Pragmatic City, again, a host of constellations is imaginable and offers important scope for experiments.

Some real-life examples of how stronger neighbourhood communities can contribute to discernibly higher liveability include:

- In a new publicly subsidised 220-unit housing development in the inner suburb of Floridsdorf, Vienna (Austria), spatial provision was made for a childcare facility, a shopping co-operative, a public laundry, an internet café, a bicycle workshop and a fleet of shared cars. Equipment and operation of these facilities are not funded by the developer, but are in the hands of the residents themselves who organised themselves with initial support from the borough council as early as during the planning process to make these special features possible.
- The ecological village co-operative of Torup, 70 km outside Copenhagen (Denmark) is built around a community centre in a former farm house which includes a shared kitchen offering daily communal meals, common laundry and meeting rooms, extensive permaculture gardens and shared open spaces. The project integrates various income groups and people with disabilities. Research indicates that residents have minimised the number of activities taken outside the neighbourhood, thus contributing to reduce transport demand (Scheurer 1998).

Towards Travel-Conscious Lifestyles

While recent policies to improve energy-efficiency in buildings and to appeal to their users' behaviour have made it clear that resource use at the place of residence can be reduced dramatically, a similar effect is still far from being achieved in the field of personal mobility which, after all, is tightly connected to the location and accessibility of the home itself. In ecologically oriented housing developments without travel demand management, energy use in transport commonly substantially exceeds energy use in the home (Scheurer 1998) and becomes the most formidable challenge to the promotion of sustainable urban living. In addition, the accommodation of the car in residential environments poses significant costs in the provision of parking - particularly in higher-density situations - and often leads to unsatisfactory design solutions in the space between buildings (Scheurer 1999).

Curbing excessive car use in favour of more walking, cycling and the use of public transit, and fostering less distance-intensive activity patterns does, however, require a fundamentally different policy approach than saving resources within the buildings. While pedestrian-friendly urban design and the existence of useful services and facilities within walking distance from homes can contribute to more balanced transport behaviour patterns, a strategy of mobility management that is to yield tangible results on a neighbourhood level will need to approach the issue from the perspective of the users and their concrete mobility needs.

In the Decentralised City and the Smart-Growing City, there is no serious intent to reduce the current extent of car ownership and use but to merely mitigate its most damaging effects by technological and urban design measures, a stance that appears extremely questionable and insufficient from a sustainability perspective (Apel et al 1997). In the Compact City, substantial reductions in both car ownership and use are part of the model, but their implementation within a democratic discourse and in the absence of a trendbreak-inducing urban mobility crisis remains more than uncertain.

However, mobility management schemes in housing areas are beginning to provide possible solutions to this dilemma and could be a valuable contribution to tackle the problem in the open paradigm of the Dispersal-Pragmatic City.

- Stadthaus Schlump, a 50-unit private rental development in an inner suburb of Hamburg (Germany) overcame the lack of potential parking space on its heritage-listed property by supplying a fleet of shared vehicles to the residents in a co-operation with Volkswagen. In addition, a periodical public transit pass forms part of the rent, and there are also some bicycles available for hire. Research shows that

despite the tenants' above-average incomes, private car ownership in the project gradually declined below average (Johnsen 1998).

- In Vauban, Freiburg (Germany) a parking management system requires residents to purchase their home and car park separately to make the full costs of the latter explicit, and to reward carfree households for their choice of behaviour. The parking facilities could thus be concentrated to the perimeter, leaving the interior of the neighbourhood completely free from motorised traffic. Also available are carsharing vehicles, discounted public transit passes, free home delivery from a nearby supermarket and a tram link to the city centre in the near future.

Conclusion and a View on the Future of Housing Policy

A more sustainable city is unlikely to just fall into place in the absence of a regime of powerful incentives and disincentives. However, attempts to implement a more resource-efficient urban form against current market forces and user needs are liable to jeopardise the process in immense friction losses. Perspectives of future urban development will need to take into account both the need for regulation and the need for stakeholders' freedom to elaborate and pursue, in a multilateral process of mediation, the most desirable solutions for all users of the urban environment.

While each containing valuable elements to inspire the transition of cities towards greater sustainability, the paradigms of the Decentralised City, the Smart-Growing City and the Compact City include, each in their own way, barriers to constrain the forces of society from unfolding their full potential in contributing to this transition. Provocatively worded, the Decentralised City negates the productive role of communities and coerces households to increase reproductive labour in the interest of urban ecology. The Smart-Growing City suggests to users that their behaviour is irrelevant to the sustainability of the city, or distrusts their ability and determination to adjust it. The Compact City ignores the economic, social and cultural trends that have led to the de-intensification of cities during the past 200 years.

At the same time, the Decentralised City illustrates the opportunities that exist at the micro-level of the individual to lead a more sustainable life. The Smart-Growing City demonstrates the synergistic effects that can come into place where urban form is reconfigured to the needs of communities, a balanced transport system and a vibrant local economy. The Compact City provides an inspirational and archetypical vision of what could be achievable if both elements, resource-saving urban form and resource-saving user behaviour, ideally coincided.

If the Dispersal-Pragmatic City is to emerge as an overarching paradigm of the urban future at the beginning of the new century, its value with regard to sustainability will be determined by the extent to which it can learn from these important messages of the preceding models, and to which it can incorporate successful elements into its collage-like vision of the city-region. The Dispersal-Pragmatic City's strength lies in its openness to pursue different paths simultaneously, as closely to the users' needs as possible, as long - and only as long - as these continue to contribute to the wellbeing of the city-region as a whole, and do not fall victim to the temptation of promoting exclusivity and fragmentation. Its weakness lies in its current lack of imagery - and it is immanent that for the time being, physical and social visions from the Decentralised City, the Smart-Growing City and the Compact City will need to continue to fill this void.

User Perspectives on the Life of 21st Century Cities

HOUSING PARADIGM	TRADITIONAL SUBURBAN DEVELOPMENT	NEW URBANISM - SMART GROWTH	INTEGRATED RESIDENTIAL DEVELOPMENT	COMMUNITY AND USER ORIENTED HOUSING
Relates to	The Decentralised City	The Smart-Growing City	The Compact City	The Dispersal-Pragmatic City
Main Providers	Private Sector	Private Sector	Public and Private Sector	Communities, Public and Private Sector
Settlement and Access Pattern	<ul style="list-style-type: none"> Residential Only w/ Segregated Retail, Services and Recreation Low Densities Impermeable, Hierarchical Street Network Marginal, Bus-Based Public Transit 	<ul style="list-style-type: none"> Residential with Integrated Retail, Services, Small Business and Recreation Hierarchical Densities Permeable Street Network Suitable for All Modes Orientation around Public Transit (Rail and Bus) 	<ul style="list-style-type: none"> Residential with Integrated Retail, Services, Small Business and Recreation Medium to High Densities Permeable Street Network Prioritising Walking/Cycling, Restricting Cars Orientation around Public Transit (Mostly Rail) 	<ul style="list-style-type: none"> Residential with Integrated Retail, Services, Small Business and Recreation Varying Densities Permeable Street Network Prioritising Walking/Cycling, Restricting Cars Orientation around Public Transit (Mostly Rail)
Parking Policy	'Predict and Provide'	'Predict and Provide'	Limited Supply	Demand Responsive
Community Facilities	Minimal	Commercial and through Open Space	Commercial and Non-Commercial	Commercial and Non-Commercial, often Run by Residents
Integration with Nature and Urban Ecology	<ul style="list-style-type: none"> Largely Insignificant or Purely for Marketing Advantage (Views, Proximity to Natural Attractions) 	<ul style="list-style-type: none"> Integration/ Restoration of Natural Features (Topography, Water) Some Technical Elements of Resource Efficiency 	<ul style="list-style-type: none"> Integration/ Restoration of Natural Features (Topography, Water) Technical and some Behavioural Elements of Resource Efficiency 	<ul style="list-style-type: none"> Close Integration of Built and Natural Environment, often Including Food Production Technical and Behavioural Elements of Resource Efficiency

Table B: Overview of Housing Paradigms

Bibliography

- Apel D, Lehmbruck M, Pharoah T, Thiemann-Linden J (1997) **Kompakt, mobil, urban:** Stadtentwicklungskonzepte zur Verkehrsvermeidung im internationalen Vergleich. Deutsches Institut für Urbanistik (difu), Berlin, Germany
- Benfield F K, Raimi M D, Chen D D T (1999) **Once There Were Greenfields.** How Sprawl is Undermining America's Environment, Economy and Social Fabric. NRDC/STPP, New York/Washington (DC), USA
- Bundesamt für Bauwesen und Raumordnung (BBR, 1998, Ed) **Stadt - Landschaft.** Orientierungen und Bewertungsfragen zur Entwicklung der Agglomerationsräume. Informationen zur Raumentwicklung 7-8/1998, Bonn, Germany
- Calthorpe P (1993) **The Next American Metropolis.** Ecology, Community and the American Dream. New York (NY), USA
- Feldtkeller A (1994) **Die zweckentfremdete Stadt.** Wider die Zerstörung des öffentlichen Raums. Frankfurt (M), Germany
- Gehl J (1987) **Life Between Buildings.** Using Public Space. New York (NY), USA
- Gestring N, Heine H, Mautz R, Mayer H N, Siebel W (1997) **Ökologie und urbane Lebensweise.** Untersuchungen zu einem anscheinend unauflösbaren Widerspruch. Braunschweig/Wiesbaden, Germany
- Gordon P, Richardson H W (1989) **Gasoline Consumption and Cities.** A Reply. Journal of the American Planning Association, Vol 55, No 3
- Hesse M, Schmitz S (1998) **Stadtentwicklung im Zeichen von 'Auflösung' und Nachhaltigkeit.** In BBR 1998
- Hesse M, Trostorff B (2000) **Raumstrukturen, Siedlungsentwicklung und Verkehr - Interaktionen und Integrationsmöglichkeiten.** Diskussionspapier, Institut für Regionalentwicklung und Strukturplanung (IRS), Erkner, Germany.
<http://www.los.shuttle.de/irs>
- Holz-Rau C, Bundesforschungsanstalt für Landeskunde und Raumordnung (BFLR, 1997) **Siedlungsstrukturen und Verkehr.** Materialien zur Raumentwicklung Heft 84. Bonn, Germany
- Jacobs J (1961) **The Death and Life of Great American Cities.** New York (NY), USA
- Jacobs M (1999) **Sustainable Development as a Contested Concept.** In Dobson A (1999, Ed) *Fairness and Futurity.* Oxford, UK
- Jessen J (1997) **Führt das städtebauliche Leitbild der kompakten und durchmischten Stadt zur Stadt der kurzen Wege?** In Bose M (1997, Ed) *Die unaufhaltsame Auflösung der Stadt in die Region?* Harburger Berichte zur Stadtplanung Band 9. Hamburg, Germany
- Johnsen D (1998) **Das Hamburger Projekt WohnMobil.** Die Verbindung von Wohn- und Mobilitätsangebot als ein Beitrag für eine umweltverträgliche Stadtentwicklung? Diplomarbeit, Fachbereich Geowissenschaften der Freien Universität Berlin, Germany
- Kahnert R (1998) **Wirtschaftsentwicklung, Sub- und Desurbanisierung.** In BBR 1998
- Kenworthy J, Newman P (1992) **The Economic and Wider Community Benefits of the Proposed East Perth Redevelopment.** East Perth Redevelopment Authority/ ISTEP, Perth (WA), Australia
- Morris W, Kaufman C, Department of Tourism, Small Business and Industry (QLD) (1996) **Mixed Use Developments.** New Designs for New Livelihoods. Brisbane (QLD), Australia
- Newman P, Kenworthy J (1989) **Cities and Automobile Dependence - An International Sourcebook.** Aldershot, UK

User Perspectives on the Life of 21st Century Cities

- Newman P, Kenworthy J (1999) **Sustainability and Cities** - Overcoming Automobile Dependence. Washington (DC), USA
- Priemus H (1999) **From Compact City to Urban Networks**. 13 AESOP Congress, Bergen, Norway, 7-10 July 1999
- Scheurer J (1998) **Evaluation of Danish Ecological Housing and Planning**. Perth/København, Denmark
- Scheurer J (1999) **Car-Free Housing in European Cities**.
<http://www.wistp.murdoch.edu.au/research/carfree.html>
- Sieverts T (1997) **Zwischenstadt**. Zwischen Ort und Welt, Raum und Zeit, Stadt und Land. Braunschweig/Wiesbaden, Germany
- Sieverts T (1998) **Die Stadt in der Zweiten Moderne, eine europäische Perspektive**. In BBR 1998
- Troy P (1996) **The Perils of Urban Consolidation**. A Discussion of Australian Housing and Urban Development Policies. Leichhardt (NSW), Australia
- Zethoven I (1991) **Sustainable Development - A Critique of Perspectives**. In Smith J W (1991, Ed) *Immigration, Population and Sustainable Environment*. Flinders (SA), Australia