From Sustainability to Socially Responsible Design

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1. Introduction

Since the Earth Summit in Rio de Janeiro in 1992, attention has focused on the need to consider the sustainable development of urban areas. This is because over 47 per cent of the world's population currently live in urban areas and it is forecasted that about 60 per cent of the population will be living in urban areas by 2030 (Population Reference Bureau, 2004). The European Community is one of the most urbanised in the world, with 79 per cent of the population living in urban areas (Fowke and Prasad 1996, cited in Gibbs 1997).

The process of urbanisation is linked to economic development, and is often strongest in countries undergoing rapid industrial growth. Indeed, cities produce some 60 per cent of the global Gross National Product (GNP) (Fowke and Prasad 1996, cited in Gibbs 1997). The effect of urban development is often mixed, however. On the one hand, urban development can pull people into the city, and migration to the cities can improve the standard of living for some. On the other hand, urban growth depletes the world's resources, as cities demand enormous levels of energy. Cities are built on 2 per cent of the earth's surface, but contain 75 per cent of the world's resources and discharge similar amounts of waste. The economic power of cities depends on the conversion of and exploitation of natural resources into consumer products. This leads to environmental problems such as air pollution, inadequate sanitation, difficulties disposing of waste and poor working and housing conditions (Girardet, 2001).

Urban development can also lead to social problems. These include crime, antisocial behaviour, fear of crime and poor health, particularly amongst disadvantaged communities and low income families. The growth of a city can also have a negative impact on the surrounding areas, as individuals and resources are pulled away from rural areas (Giradet, 2001).

National and European governments have attempted to address the problems created by urbanisation. In the 1990s, sustainable development was put on the agenda in the UK and promoted through a series of policy documents. The UK government argued that urban centres can thrive, whilst still meeting the needs of the various stakeholders, through excellence in design, environmental and social responsibility, economic investment and legislative change. The steps taken by the Government has helped to embed the concept of sustainable communities within the design literature (Commission of the European Communities, 2001; Department of the Environment, Transport and the

Regions, 1999; Office of the Deputy Prime Minister, 2002, 2003, 2004a, 2004b, 2005a, 2005b).

The paper considers whether the concept of sustainability helps designers and planners address challenges associated with urban development, and presents an alternative model based on work on Socially Responsible Design (Davey et al, 2005). The model has been developed into a practical tool to help urban decision-makers identify opportunities to be socially responsibility, both in terms of design and management practice (Davey et al, 2002).

This paper is based on research conducted as part of an EPSRC-funded project—VivaCity2020—that aims to develop tools and resources to support socially responsible decision-making. This paper was produced for discussion by members of the Design Synergy 21 project led by John Wood at Goldsmiths College, University of London. Funded under the Design for the 21st Century programme, Design Synergy comprises partner organisations interested in design, metadesign, sustainability, synergy and tool development. It was produced by this group has been a source of inspiration for the authors of this paper.

2.0 Sustainability

2.1 Defining sustainability

There exists over 70 different definitions for sustainability (see Holmberg & Sandbrook, 1992; Pearce et al., 1989), as the different academic fields and disciplines have their own definitions and approaches. Nevertheless, all agree that it is important to consider the future of the planet, and that there are ways for humans to protect the earth while satisfying various stakeholder needs. The most commonly used definition comes from the Bruntland Commission, which defines sustainability as:

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987).

This strong, people-centred definition of sustainability stresses three main quality of life objectives (Department of Environment, Transport and the Regions, 2000), namely:
n Social progress that addresses the needs of all people
n The effective protection of the environment and prudent use of natural resources
n The maintenance of stable levels of economic growth and development.

It is suggested that the three objectives are not necessarily qualitatively equal or mutually interacting. Rather, the social, economic and environmental dimensions occupy different positions in a hierarchy depending on the specific sustainability issue being addressed. The interactions between these dimensions are also dynamic and often difficult to identify, except in simple terms (Kearns & Turok, 2004; Lehtonen, 2004).

It is argued that urban areas can be made more sustainable by addressing specific problems, such as urban sprawl, commuting and crime, and enhancing the advantages (e.g. proximity to a range of amenities and diversity of social interaction), as well as

maximising interactions and feedback between the three dimensions of sustainability (Carmangi et al., 1997; Girardet, 1999). Working towards urban sustainability requires decision-makers to understand the symbiotic relationships of the different elements of the city, meet the needs of all citizens in urban areas, enhance well-being without damaging the natural world, and guarantee that the development options of surrounding environments will not jeopardised, now or in the future (Carmangi et al., 2001; Girardet, 1999; Ravetz, 2000).

It is also argued that the entire process of creating urban sustainable environments must be transparent, giving stakeholders full information, participation, and ownership in sustainable development (Office of the Deputy Prime Minister, 2004a). The broader interests of the community must be addressed in order to achieve a better quality of life for local residents. In addition, short-term and long-term effects of urban sustainable development, including any costs to the environment, the community, and the economy must be identified and assessed.

2.2. The Solution

Sustainability appears to be built on the 'utopian' premise that it is possible to 'design' a city that fulfils our social, environmental and economic requirements. The earlier work in particular appears to focus on finding an 'ideal solution'. For example, there have been attempts to recreate images of the rural environment within the cities or its surroundings—model villages, city gardens and garden suburbs. Proponents of this approach include Ebenezer Howard, the city Garden movement and decentralists like Mumford, Stein and Bauer. Implementation has revealed a number of problems with this approach, however. The City Garden approach has encouraged a process of 'surburbanisation' where outlying areas of the cities are maintained and enhanced, sometimes to the detriment of the inner city areas. It is also linked to the process of 'gentrification' of near city areas(Tiftatchell and Hedgcock 1993).

Increasingly, the focus is upon revitalising the inner city areas by embracing the city's intensity and diversity (Jacobs 1961, Tiftatchell and Hedgcock 1993). The proponents of sustainability talk of creating 'a just city', 'a creative city', 'a city of easy contact and mobility' and 'a diverse city' (From Rogers 1998 cited in Giradet 2001). In the twenty-first century, this is manifest in the development of inner city housing for professional people, the café culture and the notion of the 24-hour city. However, such developments have been criticised for failing to provide for deprived groups and contributing to problems such as alcohol-related violence.

It would appear that the solutions of today frequently become the urban design problems of tomorrow. Such urban design problems usually undergo a period of redevelopment or regeneration. This brings financial benefit to the construction and housing markets. Indeed, it may be the constant regeneration (closing, revamping and re-opening) of bars and clubs in major cities that keeps the leisure industry buoyant. If this is true, long-term design solutions may in fact fail. Against this, the concept of an 'ideal urban design solution' that is 'sustainable' (i.e. works forever) seems problematic.

The process of redevelopment and regeneration may in part be responsible for the adoption of catchall urban design ideologies, which promise to solve all the problems

the last ideology didn't. Experts and practitioners in urban design compete to prove their orthodoxy in the current quasi religion. Some reject the new doctrine and are branded heretics, whilst others will attempt to reframe it to make it more palatable. This constant activity of rejection and reframing shapes urban design ideologies over time.

The concept of "the solution" is too static and signifies an idealised end point. This presumes that urban design can have static designs as a valid output. This stems from a scientific/rationalist approach, which builds on the idea that "each act of inquiry brings us closer to understanding ultimate reality; eventually we will be able to converge on it" (Guba and Lincoln, 1989, p. 36). Achieving an utopian ideal requires that requirements be static over time—which they are not.

2.3 The three pillars

More recent approaches to sustainability stress three main quality of life objectives or "pillars" namely social, environmental and economic (Department of Environment, Transport and the Regions, 2000). The three pillars model has been represented as a bio economy model comprising three concentric circles—the inner most circle being the economic sphere, the next the social and the outer sphere the environment. This represents the idea that all economic activity should service all human beings and that safe-guarding the biophysical system is necessary for long term human survival (Lehtoner 2004).

The identification of the three pillars has helped moved sustainability away from its narrow focus on the environment towards wider issues related to social issues (Yiftachel and Hedgcock, 1993). The model does not attribute priorities, but allows the importance of each pillar to be varied according to the situation (Lehtoner 2004). However, the term "pillars" suggests that three pillars support the "temple of sustainability", and that one pillar should not be taken away or ignored. The suggestion that the three aspects can be varied or even ignored does not work conceptually. It also enables certain factors to be focused upon, perhaps at the expense of others.

Boyko et al (in press) found that the steering group responsible for the development of a deprived urban area suffering from high rates of crime and poor health focused mainly economic factors, and social factors closely linked to the economic factors, such as employment opportunities. This focus on economic factors reflects the increasing importance being placed on private investment and 'the market'.

With the rise in 'free market economics', planning increasingly focuses upon facilitating development, rather than social intervention (Tiftachel and Hedgcock, 1993). This represents a change in ideology and practice. The pursuit of a more socially just and stable society was the founding ideology of town planning practice. Industrialisation and urban squalor was closely linked to the social problems. Urban planners and designers (mistakenly) believed that quality of life was simply a product of a good environment (1850s -1950s). It was only in the 1960s that it was recognised that the planning system had failed to address underlying social problems of urban life and had unfairly disadvantaged particular groups. In the 1970s, the planning system embraced the concept of equality, but found it difficult to put into practice. In the 1980s, notions of equality gave way to the concerns about efficiency, and achieving social ends became more difficult.

Similar changes have occurred amongst other urban decision-makers. The ability of local authorities in the UK to address sustainability has been affected by(Gibbs, 1997):
n A shift from welfare-based policies to placed-based competitiveness
n Emphasis on the need to compete, both nationally and internationally
n A shift away from local authorities being providers and guarantors of services to being enablers, intermediaries and change agents.
n Erosion of local authority powers and control over the economy, characterised by the fragmentation of local governance and the emergence of public-private partnerships.

2.4 Quality of life

The focus is increasingly on improving quality of life for communities, and a range of performance measures have been developed by the DETR to measure progress towards sustainability. Mechanisms to enable local authorities to improve the quality of life communities have been established. English Partnerships and the Office of the Deputy Prime Minister have developed the concept of an Urban Regeneration Company (URC). URCs have been promoted by the government and established by local partners in order to achieve a focused, integrated regeneration strategy for key towns and cities. It is argued that URCs produce a powerful and coherent single vision for the future of an entire area and help co-ordinate its implementation (www.urcs-online.co.uk). Research into the research of a deprived area suggests that real quality of life issues may be ignored for fear of reducing interest from private investors (Boyko et al, in press). The brief raised the issue of sustainability, without defining the term or going into detail about specific problems in the area. For example, the initial brief referred to the need to "create a prosperous, attractive and sustainable community" and to develop proposals and activities that "link together to create a sustainable future". The importance of understanding and addressing economic factors (e.g. "prosperity and a resurgent economy") was highlighted, but little or no mention made of environmental or social issues, such as health or crime. Formal communications highlighted the need to understand the area, but tended to focus on the economic context—the market and "commercial realities".

As an alternative to sustainability, we have adopted the term Socially Responsible Design and developed a model to use with design decision-makers. Design has a history of addressing social and environmental issues, and the concept of Socially Responsible Design has proved successful at encouraging change amongst design decision-makers. It also focuses on the issues that design decision-makers can address, rather than the problems.

3. 0 Socially responsible design

Design has a long history of commitment to addressing social environmental issues. This includes: design movements of the 19th century that sought to improve working conditions for craftspeople; designers critical of consumerist society in the 1970s and 80s who proposed alternative solutions to real world issues; the market-led approaches that emerged in the 1980s and 90s, such as ecodesign (Whiteley, 1993); and recent programmes, such as Design Against Crime funded by the UK Home Office, Design Council and Department of Trade and Industry (Cooper et al, 2002; Davey et al, 2002;

Davey et al, 2003). These different approaches demonstrate the range of issues that have been impacted on by the design movement (Davey et al, 2005).

The concept of Socially Responsible Design has been further developed for use with design decision-makers. A new SRD model was developed from the experience of researchers working within the Design Policy Partnership. The Design Policy Partnership developed an expertise in the field of design-led crime prevention through Design Against Crime. This project involved working not just with designers and crime prevention experts, but also with schoolteachers and lecturers to embed crime prevention within education. The development of collaborative projects to address issues of social responsibility (e.g. sustainability, socially responsible decision-making, health, financial exclusion, developing world issues, environmental quality, gender equality, economic vitality and social inclusion) provided further insight into SRD thinking and activities. Following a comprehensive analysis of the recent and more established literatures on SRD and CSR, the authors were able to present a new SRD model and position it within the existing CSR literature.

Rather than focusing on problems, the model identifies eight core features of the modern experience upon which design impacts, and maps the domain of SRD as follows (see figure 1):
ß Government – design can help to make the process of national, regional and local government more responsible or representative. This might involve helping to increase efficiency, enabling more people to vote or facilitating the participation of under-represented groups.
ß Economic policy – design can contribute to national, regional and local economic policy by promoting sustainability and responsibility.
ß Fair Trade – design can provide support for workers rights and reduce exploitation of poor economies, though interventions in relation to finance, investment, manufacture and trade. This might involve establishing supplier sourcing criteria or partnering in the supply chain.
ß Ecology – design can help reduce pollution and minimise environmental impact, as well as use green technologies. This might involve developing "green buildings" that improve air/water quality, encouraging building reuse, introducing recycling or creating environmentally-friendly packaging.
ß Social inclusion – design can reduce discrimination on the basis of gender, ethnicity, age, class, education, wealth, etc. and combat social exclusion by understanding people's particular needs. For example, ethnic minority housing that meets needs specific to family size and religion might be developed. Products that are easier for older people to use have been produced (e.g. Oxo 'Good Grips' range).
ß Health – design for health promotes better service delivery and patient care, and develops methods of improving people's health within society at large. This might involve improving the quality of medical resource provision, developing devices that enable medicines to be administered outside of the healthcare system and helping produce equipment that prevents injury for vulnerable groups (e.g. cooker monitor for older people).
ß Education – design can improve the quality and efficiency of delivery. This might involve architects and interior designers designing schools to better facilitate learning or design professions providing support for school projects.
ß Crime – design can be used to reduce the incidence of crime, alleviate fear of crime and minimise the impact of crime.

These issues relate to the wider domains of:
ß Government, at a national, regional and local level
ß Business and commerce at global, national, regional and local level
ß Non-government organisations (NGOs) such as charities, pressure groups, etc.
ß Health and education at a national, regional and local level.

The level and domain in which SRD is practiced will depend on the nature and aims of the organisation, and the context in which it is undertaken. Clearly this context changes over time, and more organisations may deal with issues at a global level due to the process of globalisation and the development of pan-national systems, such as the European Community.

Figure 1: The Eight tenets of Socially Responsible Design

The new model enables different design approaches to be located within an overall framework, without dictating the focus or approach. However, the model makes clear the potential for SRD, and allows progress within the eight areas to be evaluated.

To help organisations identify and address issues of social responsibility, a more graphic representation of the model has been used with design professionals (Davey et al, 2002), clients and student designers. The new model enables different design approaches to be located within an overall framework, without dictating the focus or approach. However, the model makes clear the potential for SRD, and allows progress within the eight areas to be evaluated.

4.0 Management and maintenance

It should be noted that any design solution can only meet the requirements, sustainability or otherwise, identified at the time of conception. Future scenarios may be forecast, but cannot be guaranteed. Sudden changes can occur (Gladwell, 2000; Lowenstein, 2002). Given this fact, it would seem fundamental for designers to incorporate into their designs the facility for future adaptation to meet future circumstances that will almost certainly change.

We would suggest that the search for appropriate adaptability, rather than that for static design 'perfection' should be at the heart of sustainable design. Design adaptability should take into account current economic, social and environment priorities, but recognise that these priorities may change in the future. Thus, for real sustainability, a design solution that meets the sustainability priorities of today must be adaptable to meet those of the future—or face demolition.

Rather than a signifier of failure, demolition, in our new thinking of sustainability, may in fact be the birth of new economic investment in an area.

We have to acknowledge that we have limited ability to understand and manage our social and economic needs. We may be able to see the rising or falling trajectory, but we cannot necessarily predict when a turning point or, indeed, tipping will occur(Gladwell, 2000). This can be due to changes in perception (e.g. belief that a market will fall can precipitate its collapse) (Lowenstein, 2002).

We should focus attention on monitoring changes and potentially adapting our designs accordingly. Some aspects of a design are clearly easier to adapt than others. Mangers of the built environment may be able to add gates and fences, but they will have to demolish estates to change the layout. Planners and urban designers may be able to change the density of cities and suburbs, but cannot fundamentally change a city's location. We therefore have to be aware of the life of the city and the our limitations regarding its redevelopment.

Despite the difficulties, we should continue to aspire to create better cities and promote sustainability. We do have the ability to visualise, inspire and potentially empower others. The concept of synergy may prove useful in this respect.

5.0 Synergy

Synergy may be defined as the additional benefit arising from bringing a number of systems together to form a larger system. It reflects the commonly held view that 'the whole is greater than the sum of its parts' (Bullock et al., 1988). According to Bullock et al. (1988), the term synergy derives from biology where it is an alternative term for synergism. Synergy is where the combined effect of various agents is greater than the sum of the effect of each one considered individually. It is frequently used to explain the effect of drugs.

The notion of synergy is often applied to management, especially corporate mergers and corporate strategy. When applied to corporate strategy, synergy simply means that 'collaborative benefits' are expected from working together (Bullock et al., 1988). Synergy is currently being used to describe the generation of "unplanned social benefit amongst people who unconsciously cooperate in pursuit of their own interests and goals" (p. 840).

At first sight, the notion of unplanned social benefits appears applicable to the issue of sustainability. The idea that individuals pursue their own goals acknowledges the reality of business, whilst attempting to identify opportunities for mutual benefit opens up the possibility of considering issues related to sustainability-—especially social benefits. The definition implies that individuals work together unconsciously in the pursuit of their own goals and that social benefits are 'unplanned'. However, individuals may be very conscious of their own interests and actively seek to identify mutual benefits. Indeed, successfully pursuing one's own goals, without comprising others' interests generally requires self-insight and empathy. It may necessitate a sharing of resources, praise, status and even profit—these behaviours may go against some aspects of business practice and may require some degree of learning.

While the notion of unplanned social benefits is easy to apply, it does little to enrich our understanding of social relations. Indeed, Wood (2005) warns against defining synergy in too bland a way (ie, simply as mutual benefits or a system that is greater than the sum of its parts—most people seek to achieve mutual benefits and most systems are more than the sum of the parts).

Wood (2005) points out that synergy was originally used to understand the properties of 'whole systems' and reflects interest in systems theory. In his view, it is this aspect of the concept that is far more interesting and potentially useful. He highlights the work of

Corning (1998) who states that synergistic states are not just more complex (i.e. greater) than the sum of its parts, but are also quite different, i.e. they exhibit special properties. Corning (1998) identifies a range of concepts to explain synergistic states:

n Linear or additive phenomenon
n Emergent phenomena
n Division of labour
n Mutuality enhancing/augmenting functions
n Bio-economic efficiencies
n Information sharing

Further research may reveal that notions such as 'emergent properties' are useful for understanding cities and sustainability. It has already been suggested that we examine literature on the properties of cities, which we suspect draws on systems theory. However, systems theory does appear to have limitations, and we remain unconvinced that it will offer the insights we are looking for. Few of us operate at the level of system or have control over a 'whole system'. We simply produce single projects or designs. Our ability to change or even influence the wider system may be severely limited. Until more practical tools based on the concept of synergy are developed, we will continue to use the concept of Socially Responsible Design.

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n Building Equality in Construction – supporting construction companies and their clients in promoting equality of opportunity
n Building Partnerships – enabling effective partnerships within the construction industry to improve quality and performance
n Community Finance – improving disenfranchised communities access to financial services tailored to their needs
n Lifelong Learning – establishing online learning opportunities for healthcare professionals and small and medium sized enterprises (SMEs)
Current projects include Design Against Crime (£150k), funded by the UK Home Office, Design Council and EU Commission's AGIS (2003) programme; and VivaCity2020? (£3.0m), funded by the Engineering and Physical Sciences Research Council (EPSRC). Dr Davey has organised workshops and given presentations across Europe, and published in refereed journals. She has also produced practical guidance material on equality (Building Equality in Construction, 1998), community finance (Developing a Community Reinvestment Trust, 2003), and Design Against Crime (Guidance for the Design of Residential Areas, 2003). Dr Davey submitted with the Built and Human Environment for the RAE in 2000, and was rated 5*.

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