Forum

Cultures of architecture and sustainability

Simon Guy

School of Architecture, Planning and Landscape, University of Newcastle, Claremont Tower,
Claremont Road, Newcastle UponTyne NE1 7RU, UK
E-mail: s.c.guy@ncl.ac.uk

> What is clear is that there is no still point of the turning world as far as green is concerned. Variations are thrown up by social, political, cultural and economic factors, as well as by individual preferences.
>
> (Castle, 2001, p. 5)

This short paper is intended to provide some critical reflections on a series of regional conferences to promote sustainable building held in 2004–05. These events were designed to augment a cycle of international conferences and a prevailing international approach to sustainable building with the aim of raising awareness, exchanging information on region-specific topics, identifying research and practical needs, discussing capacity building, and, most importantly, elevating the needs and concerns of a regional approach to the international community. The hope was that the results would provide opportunities for comparative analysis of the potential for and obstacles to sustainable building in developing regions. This was an ambitious agenda and perhaps not surprisingly, the papers resulting from these conferences highlight both the limitations of the current research approach and the degree of challenge facing such an internationally comparative agenda on sustainable architecture. In particular, a major fault line running through all the papers is the contested nature of sustainability and the search for some sort of stable knowledge base upon which to act. This challenge is compounded when such diverse contexts of development are being faced as can be found across Asia, South America, Africa

and Europe. Hajer (1995, pp. 1–2) has pertinently argued that:

> if analyzed closely, environmental discourse is fragmented and contradictory. Environmental discourse is an astonishing collection of claims and concerns bought together by a great variety of actors.

Debate about what are the priorities of sustainability have become very politically charged with some economists even urging us to forget climate change as the least of our worries, and instead to focus on aids, water and hunger (Vidal, 2004). While the authors are united in opposing this view and urging strategies to engage with sustainability, they are uncertain about what such an agenda might mean.

> The term 'sustainable construction' has a diversity of meanings depending on the context and background of those using the term. The CIB *Agenda 21 on Sustainable Construction*, and the subsequent *Agenda 21 for Sustainable Construction in Developing Countries*, sketch out the landscape of relevant issues, but at a general level.
>
> (Larsson, 1995, p. 402)

Yet, as Hajer (1995, pp. 1–2) has further noted, somehow seemingly coherent problems are distilled out of this 'jamboree of claims and concerns'. This emphasis on the interpretative flexibility of sustainability has become increasingly signalled as a key characteristic of debates about sustainable architecture (Guy and Farmer, 2001; Guy and Moore,

2005). For example, Wines (2000, p. 67) has similarly suggested that:

> Increasing numbers of exceptionally talented architects are exploring a range of approaches and definitions for a new ecological architecture. For certain designers, the latest advances in engineering and environmental technology are central to their objectives; while, for others, it is important to return to the lessons of history and the use of indigenous methods and materials. For another group, the resource of topography, vegetation, solar energy and the earth itself are the means to achieve an expanded vision of organic buildings.

Such confusion is well illustrated by an edition of *Architectural Design* published in July 2001 (Edwards, 2001) that presented a set of 'green questionnaires completed by eminent architects – Norman Foster, Richard Rogers, Jan Kaplicky, Ken Yeang and Thomas Herzog – which each demonstrate these contradictory ways of seeing. Each architect was asked about his definition of sustainable design, his key concerns with regards to sustainability, how they would judge success in terms of sustainability and how they used nature as a guide in their design work. For Kaplicky of Future Systems, the:

> major aspects of sustainable design are choice of materials and the performance of a building once it is built.
>
> (Edwards, 2001, p. 34),

whereas for Rogers it must also include a:

> concern for the principles of social and economic sustainability as well as the specific concerns of energy use and environmental impact of buildings and cities.
>
> (p. 36)

For Herzog, it is about:

> using renewable forms of energy – especially solar energy – as extensively as possible.
>
> (p. 74),

while for Yeang, it is:

> design that integrates seamlessly with the ecological systems in the biosphere over the entire life cycle of the built system.
>
> (p. 60)

The relationship of architecture to nature is also contested. Rogers's rather vaguely argues that 'nature provides inspiration, information and analogy' (p. 36). Others are quite precise in linking natural and human processes. Yeang, for instance, believes:

> nature should be imitated and our built systems should be mimetic ecosystems.
>
> (p. 60),

while Kaplicky similarly feels:

> there is much to learn from (nature's) more efficient use of materials.
>
> (p. 34)

By contrast, Herzog does not believe that:

> architecture can be deduced directly from nature, since the design process and function of our buildings are quite different from what is found in most plants and animals.
>
> (p. 74),

while Foster prefers to:

> look to human natures, vernacular traditions that are specific to the area in which we are working.
>
> (p. 32)

There are similar levels of disagreement about how one might recognize and assess the success of architecture in becoming sustainable. Rogers argues his practice meets the challenge of sustainability through:

> intelligent design and building fabric which contribute to a substantial

reduction in running and maintenance costs during the life cycle of a building.

> (p. 36)

Foster agrees, arguing that a

> 'green' building will use as little energy as possible and will make the most of the embodied energy required to build it.

He argues it should also create its own energy and have structural flexibility so that its life is prolonged. Foster confidently suggests his own Reichstag building in Berlin has already 'proved these concepts' (p. 32). Herzog concurs with this emphasis 'overall performance', but also argues that only 'beautifully made buildings' can really be sustainable and that architects must develop:

> new forms of architectural expression which are closely linked to the local micro-climate and topography, the natural resources and the cultural heritage of a certain region.
>
> (p. 74)

Yeang goes further, insisting that a:

> successful 'green' building is only one that integrates seamlessly with the natural systems in the biosphere

and warns that:

> designers should also beware of making excessive claims about the sustainability of their designs because ecological design is still in its infancy.
>
> (p. 60)

Kaplicky concurs with Yeang, arguing that as yet 'there have been no truly green buildings built'. He goes on:

> The buildings that are currently being constructed aren't even prototypes for a green age. They are only minor attempts at sustainability.
>
> (p. 34)

As even this tiny sample suggests, the mainstream of architecture is in some disagreement about design priorities, the role of technology, the importance of aesthetics, the relationship between natural and built environments, and the degree of optimism or pessimism the current state of sustainable architectural practice should invoke. It is perhaps not surprising that given this complexity and potential for contradiction, Foster is tempted to define sustainable design as simply just 'good architecture' (p. 32). However, it is again not surprising

that Foster's rather optimistic view contrasts sharply with architects such as Wines (2000, p. 226) who want to emphasize that:

> … virtually no form of shelter constructed today (with the exception of habitat built by a few remaining aboriginal cultures) can be credited as authentically green. Everything that technologically dependent societies assume is essential for survival – including the remedial solutions offered by the greenest of green architects – is plugged into the same diminishing sources of power. Every absorber plate and foil insulator required to build a solar collector, every chemical detergent used in a waste-composting plant, every ream of paper needed to spread the ecological message and every drop of jet fuel consumed in transporting environmentalists to international conferences places an additional drain on these resources.

A brief survey of the papers highlights this diversity. In the paper on Africa, for instance, Du Plessis (2005) identified the:

> provision of adequate housing, infrastructure delivery and dealing with rapid urbanisation

as key priorities. For in many countries:

> a large percentage of the population, including those in urban areas, live in either traditional dwellings built with adobe or wattle and daub, or in shacks constructed of a range of materials.
>
> (Du Plessis, 2005, p. 409)

By contrast, in China the major driver is the change in the national real estate and economy towards a market system. The transition from a non-existent real estate market (before the 1980s) to a period of market-driven and individually owned private homes (after the 1980s) shows development priorities are failing to consider sustainability as a key development goal. In Central and Eastern Europe Lorenz *et al.* (2005, p. 419) inform us that:

> 40% of inhabitants in the larger cities live in large, mass-produced, prefabricated housing estates

which hardly conform to sustainability criteria, while:

> the careful rehabilitation of the old, historically valuable housing stock is a major issue.

In both cases:

> the regeneration of many urban areas is a pressing need, the demand for new housing estates is high and a pressing need exists to realize major trans-European infrastructure.
>
> (Lorenz *et al.*, 2005, p. 419)

Latin America, according to the authors, faces 'vulnerability to catastrophic events':

> poverty reduction, maintaining economic growth, enhancing income distribution and coping with rapid and unplanned growth of cities.
>
> (Gomes and Gomes da Silva, 2005, p. 428)

While many of these issues resonate across continental borders, the thematic priorities of the conferences appear to have varied:

> both the Latin American and African conferences, for example, the social and economic dimensions of sustainable construction loomed the largest, while in Central and Eastern European conference, the heritage of polluted skies and soils tended to shift the focus in that direction. In the China conference, a central theme was the implications of rapid future growth and the consequent heavy demands on natural resources and impact on the economy as imports of materials rise markedly.
>
> (Larsson, 2005, p. 402)

All in all, the conclusions of the conference seem to be summed up by a feeling that although an understanding of the general concept of sustainable construction may be developing at a satisfactory pace, one must retain a measure of healthy scepticism by acknowledging that as new terms and concepts become popularized, they are adopted around the world for a variety of purposes.

Searching for sustainability; standardization and order

It is at this point that one finds a familiar response to the confusions and contradictions inherent in the sustainability challenge, that of a call for more information, training, education and awareness-raising. For while each paper strives to identify context-dependent factors framing the uptake of sustainable technologies and design approaches, it seems a focus on a knowledge and skills gap unites all the authors. In particular, there is a call for the development of common assessment methods and models. For example, the Latin American paper advocates the:

> use of environmental tools and assessment methods, communication and training should be intensified a to spread SBC concepts, improve performance and demystify incorrect perceptions.

Of course, there is a key role to be played by such systems, but as Cole (2005, p. 457) points out, perhaps one should ask whether:

> too great an expectation is now placed on their ability to create the desired change at the expense of their relationship with other potential change mechanisms.

The critical concern here is if one starts to avoid the contingent complexities of sustainability across cities, regions, countries and continents by focusing attention on apparently universalized systems of measurement as a guide through the cultural diversity the papers also highlight. If one subscribes to the idea that if one is to achieve sustainable buildings then architecture should become more 'objective,' and that:

> until a consensus is attained, the ability of the architectural community to adopt a coherent environmental strategy, across all building types and styles of development, will remain elusive.
>
> (Brennan, 1997)

As suggested elsewhere (Guy and Farmer, 2001), such 'environmental realism' is founded on the notion that:

> rational science can and will provide the understanding of the environment and the assessment of those measures which are necessary to rectify environmental bads.
>
> (Macnaghton and Urry, 1998, p. 1)

Further implicit in this model of consensus is a 'process of standardisation', which means that 'particular local conditions' and competing 'forms of local knowledge' tend to be ignored (Macnaghton and Urry, 1998, p. 9). While some of the papers also warn against this tendency and call for a recalibration of assessment methods to account for local cultures, there is an inherent danger that the science of assessment may encourage a convergence of priorities that precludes the diversity explored through these papers.

Searching for pluralism: beyond standardization

There is a growing literature that rejects both these call for standardization. Edwards (2001, p. 7), for example, celebrates the fact that the agenda of sustainability is not:

> leading to a single universal style but to a rich and complex architectural order around the world,

arguing that this diversity of interpretation can be too easily 'overwhelmed by the internationalisation of sustainability as evidenced by scientific literature'. Here one finds clear recognition that there is:

> no class or style of design which is unequivocally sustainable architecture, and no fixed set of rules which will guarantee success if followed.
>
> (Williamson *et al.*, 2003, p. 127)

Unfortunately, Edwards (2001, pp. 10 and 13) appears to look to a form of cultural essentialism to explain the alternative formation of sustainability between 'West' and 'East', suggesting that:

> The West tends to 'measure' sustainability whilst the South and East simply 'feel' it. Asia and Africa act out good green practices by instinct, and their point of reference is not Newton or Einstein but the local shaman or wisdom keeper.
>
> . . . As a general statement, the spiritual approach to green design is found in the underdeveloped world and the low-energy, high-material approach in the developed.
>
> (Edwards, 2001, p. 10)

This analysis usefully recognizes both the contested nature of the sustainability concept and the need to encompass the differing contextual values of the design process across cultures when understanding buildings. However, the result is a relatively limited dualistic categorization of values in which the dilemma of environmentalism is often portrayed as an expression of two distinct and unbridgeable worldviews. Taking another stance, Williamson *et al.* (2003, p. 127) ask:

> How, then, should we look at a building, at architecture as a cultural product that needs to be judged as an integrated entity while recognising that it is simultaneously 'coming from' multiple origins and objectives?
>
> (Edwards, 2001, p. 13)

They point to the importance of integrating social, economic and environmental

sustainability in what is often termed the 'triple bottom line'. The draw upon the planner Scott Campbell's (1996, p. 468) triangular model of sustainable development, with its tripartite structure of equity, economy and ecology, and conflicts between these goals over property, development and resources. The aim of the model is then to mediate these competing priorities and conflicts in search for a resolution represented by the centre of the triangle. Williamson *et al.* (2003, p. 130) reinterpret Campbell's model with their own emphasis on the co-existence, parity, and optimization of nature, culture and technology:

> We can look at this as the construction of a reasoned argument that weaves together the ethical, human, scientific, aesthetic and other aspects of these three contexts. If an architect can do this, taking into account all the stakeholders, she or he is performing a beautiful act.

This emphasis on the participation of stakeholders in the re-balancing of priorities points the way towards an alternative concept of sustainable design. Rather than seek the certainties of standardized solution and universal objectives, Cole (2005, p. 464) describes an approach that emphasizes 'process over product' in which:

> assessment methods … facilitate and enhance dialogue, communication and story-telling among and between key parties involved in a building project.

Kaatz *et al.* (2005, p. 450) write similarly of a participative process that considers 'biophysical, social and economic issues' and which:

> reflects the different value sets that are at play in a given project context.

This emphasis on 'conversation' might help open up the debate about sustainable architecture, to ask:

> what alternative ways of seeing we can envisage; how do we analyse environmental problems?; and how do we want to live both in and with nature.
> (Fischer and Hajer, 1999, p. vii)

and to:

> appreciate the ways in which we culturally interpret rather than objectively reflect the relationship of society to nature.
> (Fischer and Hajer, 1999, p. vii)

Towards a new agenda of sustainability research

> A fundamental feature of the new environmental politics is that there is no one true, or trusted, form of expertise, no single path to the truth.
> (Jamison, 2001, p. 27)

In sum, while acknowledging how a technical, performative approach to understanding environmental design has brought undoubted benefits in terms of highlighting the issues of energy efficiency in buildings, one must fundamentally revise the focus and scope of the debate about sustainable architecture and reconnect issues of technological change with the social and cultural contexts within which change occurs. Drawing upon more critical, interpretative and participative approaches to sustainable design, this would involve researchers both in defining the nature of the environmental challenge and in exploring a range of context-specific responses. For while both checklists and philosophical speculation can be helpful and even necessary to achieve certain objectives, they rarely provoke the wider 'public talk' (Barber, 1984) necessary to engage community participation in sustainable design. That is, the 'work' of choosing how we want to live – with and in nature – in order to sustain life into the future. This is not an idle debate. Exploration of diversity in design and development would encourage a deeper engagement with sustainable architecture, one that does not shy away from broader sociological or philosophical questions or merely indulge in the narrowly instrumental debates that characterize so much of the green architecture literature (Guy and Shove, 2000). By exploring sustainable architectures in the plural as competing interpretations of our environmental futures, one can begin to ask new questions and perhaps introduce some fresh thinking about sustainable design (Guy, 2002).

The challenge is then for researchers to work across disciplines and engage directly in the cultural contexts of the sustainability challenge in order to produce situationally specific design solutions. These researchers will require direct backing in this endeavour from research funders, who must also look beyond disciplinary boundaries in order to foster this agenda. Finally, policy-makers and planners must abandon the search for universal solutions and join this conversation about the localized, contingent meanings of sustainability.

References

Barber, B. (1984) *Strong Democracy: Participatory Politics for a New Age*, Berkeley, CA: University of California Press.

Brennan, J. (1997) Green architecture: style over content. *Architectural Design*, **67**(1–2), 23–25.

Campbell, S. (1996) Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development, *APA Journal*, **Summer**, 468, 296–311.

Castle, H. (2001) Editorial: Green architecture. *Architectural Design*, **71**(4), 5.

Cole, R.J. (2005) Building environmental assessment methods: redefining intentions and roles. *Building Research & Information*, **33**(5), 455–467.

Du Plessis, C. (2005) Action for sustainability: preparing an African plan for sustainable building and construction. *Building Research & Information*, **33**(5), 405–415.

Edwards, B. (Guest Editor) (2001) Green architecture. *Architectural Design*.

Fischer, F. and Hajer M.A. (1999) *Living with Nature: Environmental Politics as Cultural Discourse*, Oxford University Press, Oxford.

Gomes, V. and Gomes da Silva, M. (2005) Exploring sustainable construction: implications from Latin America. *Building Research & Information*, **33**(5), 428–440.

Guy, S. (2002) Introduction: Sustainable buildings: meanings, processes, users. *Built Environment*, **28**(1), 5–10.

Guy, S. and Farmer, G. (2001) Re-interpreting sustainable architecture: the place of technology. *Journal of Architectural Education*, **54**(3), 140–148.

Guy, S. and Moore, S. (eds) (2005) *Sustainable Architectures: Cultures and Natures in Europe and North America*, E&FN Spon, London.

Guy, S. and Shove, E. (2000) *A Sociology of Energy, Buildings and the Environment*, Routledge, London.

Hajer, M. (1995) *The Politics of Environmental Discourse: Ecological Modernisation and the Policy Process*, Oxford, Oxford University Press.

Jamison, A. (2001) *The Making of Green Knowledge: Environmental Politics and Cultural Transformation*, Cambridge, Cambridge University Press.

Kaatz, E., Root, D. and Bowen, P. (2005) Broadening project participation through a modified building sustainability assessment. *Building Research & Information*, **33**(5), 441–454.

Lorenz, D., Lützkendorf, T. and Panek, A. (2005) Sustainable construction in Central/Eastern Europe: implications from SB04 in Warsaw. *Building Research & Information*, **33**(5), 416–427.

Macnaghton, P. and Urry, J (1998) *Contested Natures*, Sage, London.

Vidal, J. (2004) Forget climate change, that's the least of our worries, say Nobel winners. *The Guardian*, **21 October**, 3.

Williamson, T., Radford, A. and Bennetts, H. (2003) *Understanding Sustainable Architecture*, E&FN Spon, London.

Wines, J. (2000) The art of architecture in the age of ecology, in D.E. Brown, M. Fox and M.R. Pelletier (eds): *Sustainable Architecture: White Papers*, Earth Pledge Foundation, New York, pp. 12–18.