SHARING FUTURES

Literature review summary
Sustainable urbanism: processes and outcomes

Background

'Sustainable urbanism' is an umbrella term for planning and design practices that seek to deliver, and foster a step-change towards, increasingly environmentally-, socially- and economically- sustainable urban environments[1]. Over the last decade, sustainable urbanism has been a core goal of major multilateral strategies such as the UN *Human Settlements Programme*[2] and EU *Leipzig Charter on Sustainable European Cities*[3]. Sustainable urbanism has also underpinned national policy agendas worldwide, including the Indian *Smart Cities* programme[4], *China Sustainable Cities* Programme[5], and the *Sustainable Communities* plan in England[6].

Literature review

A large body of academic research has been published about sustainable urbanism. The following summary is based upon a review of new, peer-reviewed, research-based, English-language research papers which contain the phrase 'sustainable urbanism' in title/abstract published between 2010-15. A total of 125 research papers met these inclusion criteria.

Key findings

Although hugely diverse in terms of methodology, discipline, location and focus, the papers under review tend to either: (i) explore processes of planning and delivering sustainable urban spaces; or (ii) evaluate outcomes of sustainable urban developments. Key, recurring findings are as follows.

i. Processes of planning and delivering sustainable urban spaces

- Developments which are widely-cited as exemplars of sustainable urbanism are typically underpinned by sustained processes collaboration between planners, policy-makers, stakeholders and publics[7]. In many case studies, participatory neighbourhood-level workshops have produced tangible enhancements to built environments and had transformative impacts upon professionals' outlook and practice[8].

- However, in large-scale urban development projects, consultation and planning processes are often curtailed and financially constrained[9]. Since masterplanning commissions are often relatively short-term and extremely commercially competitive, timescales and budgets often preclude substantially innovative modes of sustainable urban planning.

- A small, elite cluster of large architecture, planning and engineering consultancies have become highly successful in bidding to provide masterplan for international sustainable urbanism projects[10]. These companies' masterplans tend to reproduce a relatively limited, consistent 'menu' of ideas, in which a small number of European exemplars are widely, somewhat-uncritically cited as good practice.

- In an uncertain political-economic climate[11] urban sustainability planning is increasingly underpinned by discourses of 'what is (not) realistic' and characteristically steered by private sector management consultants with narrowly-focused expertise in efficiency savings in project delivery[12].

ii. Outcomes of sustainable urban developments

- Across a wide variety of specific urban design features – ranging from roofing[13] to water usage[14] to block-level landscape features[15] – there is ample evidence that purposeful sustainable urbanism projects produce modest but significant and discernable positive outcomes: e.g. in terms of buildings' energy-efficiency, water management, air pollution or biodiversity.

- Sustainable urban development projects also constitute a range of potentially rich opportunities for public and intergenerational engagement in relation to sustainability issues.

- Evaluation of outcomes of sustainable urban developments has, in the past, overwhelmingly been focused upon the technical performance of individual buildings. A predominant use of quantitative metrics and tools has arguably constituted a limited appreciation of outcomes of sustainable urban planning processes[16]. Assumptions which underpin evaluative tools often go unquestioned[17].

- Outcomes of sustainable urban design are locally-contingent and difficult to predict accurately[18]. In particular, outcomes vary significantly because of factors relating to the social, historical, political and cultural context of particular sustainable urban developments, which are not readily captured by traditional methods of evaluation.

- Outcomes of sustainable urban developments are often constrained by a range of location- and culturally- specific misconceptions, rumours, disillusionments, and urban myths relating to sustainable urban architectures[19].

Future research and practice

The following key recommendations for future research and practice occur frequently in the reviewed studies.

- The evidence base in relation to sustainable urbanism tends to highlight a small number of 'classic' exemplar case studies[20]. Academics and professionals should engage with a much more diverse range of case studies, and in so doing should reflect on their practice in relation to a much wider range of urban-political contexts and (sometimes more radical or challenging) planning processes.

- Many studies conclude by calling for future research on one or more of the following topics:
  - day-to-day processes of decision-making, planning and commissioning in relation to sustainable urbanism
  - outcomes and efficacy of international transfers of expertise, concepts and processes, particularly the predominant roll-out of principles of sustainable urbanism from Europe/North America to other contexts
  - the 'translation' or 'mutation' of planned sustainable urban features into built urban features
  - comparative studies of apparently similar sustainable urban development projects in different contexts
  - user interactions with sustainable design features

- Researchers and planners could engage in a wider range of participatory, collaborative and co-productive practices, to engage users/residents in processes with tangible outcomes, foster stronger public understanding of science around sustainable urbanism, and develop practitioners' skills in user-engagement[21]. A wide range of models and resources for possible collaborative workshops can be found in recent literature on sustainable urbanism[22].

- A wide range of research methods – collating more diverse forms of data (e.g. quantitative, qualitative, visual, sensory, landscape, cartographic) – should be employed in the assessment of outcomes of sustainable urbanism projects. Evaluations of sustainable urban developments should be based on a wider range of success factors, balancing quantitative data (e.g. measuring CO_2 outputs and energy-efficiency) with qualitative data (e.g. assessing public realm quality more widely).

- A commitment to interdisciplinary, collaborative research and practice is crucial for understanding barriers, opportunities and outcomes in relation to sustainable urbanism[23] . Given the complex, interdependent nature of issues and systems involved in sustainable urban development, cross-disciplinary collaborations between diverse scientists, social scientists and planning professionals would be of particular benefit.

The Sharing Futures partnership

Sharing Futures is a major ESRC-funded collaboration between engineering scientists in Brazil and social scientists in the UK. The partnership addresses key challenges in planning for sustainable urban environments, with a particular focus upon water and energy resources. For further information and resources, including a range of summary literature reviews, please visit the partnership website: http://www.sharing-futures.com/

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