

a bookend to mark GI's coming of age



Over the past ten years the principles of green infrastructure (GI) have become established as a formal element of planning policy and are now recognised as an essential part of the design and place-making toolkit. The start of this process was marked by the publication of the most formative early reference on the subject, Mark Benedict and Edward McMahon's *Green Infrastructure: Linking Landscape and Communities* in 2006.¹ It now closes with the publication in 2015 of an extensive and well researched *Handbook on Green Infrastructure*, edited by Danielle Sinnett, Nick Smith and Sarah Burgess.² Neatly, both texts act as important and literal bookends that mark a ten-year period during which the subject of green infrastructure has clearly come of age.

Spread over five sections, the *Handbook on Green Infrastructure* looks at the role of green infrastructure in the urban environment, its strategic planning and design, and implementation and management, and concludes with a short section on its future development. Each of the 23 chapters is authored individually or collaboratively, by 47 authors in total. Most come with an academic perspective, but this extensive list of writers also includes, importantly, a small number of practitioners.

As a handbook, it is clearly pitched to offer an extensive academic primer on the subject. In parallel it provides a valuable point of in-depth reference for planning, landscape and urban design professionals engaged in developing policy and preparing environmental frameworks and masterplans. It is less of a design manual to guide more detailed technical design and construction. Encouraged, no doubt, by its team of three academic editors, based at the University of the West of England, it is well researched and extensively referenced. And it is of a length that provides the opportunity to explore each topic in good depth.

Following an introductory chapter that describes the structure of the book, the first section looks at the role of green infrastructure through five interconnected themes: health; air quality and temperature; urban water management; economic value; and biodiversity.

Leading with health provides an opportunity for a brief, albeit underplayed, historical perspective that includes references to the public health motives of the Victorian park movement in the UK and the work of Olmsted in the United States. The green infrastructure of the time was first seen as a mechanism to improve the physical infrastructure of fast growing industrial towns and cities, improving sanitation, water supply and public health. Olmsted's drive to create park systems 'linked to one another and to surrounding neighbourhoods' is best illustrated by his celebrated Emerald Necklace in Boston. This offers probably the most formative 'greenprint', providing the precursor to the landscape and green infrastructure planning of Garden Cities, New Towns and Green Grids of today.

The strategic planning section is led by Ian Mell's clear overview of an evolving national and regional green infrastructure policy framework within the UK, set out with reference to the United States. This pairs well with a following chapter from the team at the Mersey Forest, providing a more detailed review of operating at a regional, sub-regional and city scale. Experience in the North West and Merseyside, including the pioneering Natural Economy Northwest programme, was as much a collaborative and opportunistic advocacy programme as a means of shaping and influencing emerging planning policy and spatial development strategies.

Around the midpoint the handbook's themes start to overlap, with similar chapters covering social inclusion; inclusivity; ensuring a green infrastructure for all; establishing equitable provision of green infrastructure at the neighbourhood scale; and the intergenerational use of school grounds and parks for play and learning. A following chapter on the role of green infrastructure in the conservation of historic and natural environments refocuses the reader on the fundamental role that green infrastructure plays in creating and securing liveability in cities that are becoming increasingly dense. It uses Vancouver, described as a 'poster-



Green infrastructure plays a key role in creating and securing liveability in cities

child of urbanism', as a compelling case study, where Vancouverism has sustainably fused a park-rich green infrastructure with a highly dense urban core – a supercharged 'garden city' perhaps?

The more nitty-gritty aspects of green infrastructure implementation and management follow with further well paired chapters from Nicole Collomb and Annie Coombs. These tackle issues of governance, funding, management and community involvement. They are usefully illustrated with a half-dozen project case studies that see communities increasingly engaged in and leading more bottom-up environmental improvement programmes, driven by a number of overlapping political, social and financial factors

Kieron Doick and Jeffrey Wilson conclude this penultimate section with one of the strongest chapters of the book, addressing the monitoring and evaluation of green infrastructure and ecosystem services, and setting out the goods and benefits that green infrastructure confers, including fuel provision; climate regulation; storm water regulation; noise mitigation; and habitat provision.

So what might the next decade bring for green infrastructure? The concluding chapter, co-written by the editors and Andy Moffat, suggests an inevitable and uncertain flex in future green infrastructure

development from both political and social perspectives. Clearly the drivers of urbanisation, health, climate change and biodiversity will continue to be central to advancing green infrastructure policy and practice. The increasing sophistication of digital technology will certainly facilitate a smarter green infrastructure, and a more refined understanding of ecosystem services and natural capital accounting will reinforce the case for investment. The *Handbook on Green Infrastructure* makes a useful contribution to changing the way we think about, value and plan green infrastructure in the future.

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Notes

- 1 Mark Benedict and Edward McMahon: *Green Infrastructure: Linking Landscape and Communities*. Island Press, 2006
- 2 Danielle Sinnett, Nick Smith and Sarah Burgess (Eds): *Handbook on Green Infrastructure: Planning, Design and Implementation*. Edward Elgar Publishing Limited, 2015 (ISBN 978 1 78347 399 1; e-book ISBN 978 1 78347 400 4)