Afterword

The Way Forward: Sustainable Urban and Infrastructure Development

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The understanding that economic development, and in particular the development of the built environment, impacts on our natural environment has been well articulated for many years. For example, the 1972 United Nations Environment Program in Stockholm outlined a framework for environmental action. By today’s standards, however, this initial Stockholm declaration was somewhat backward looking, focussing on the clear and tangible problems of Marine Pollution and ‘Pollution Generally’. In 1987, however, the Bruntland Commission—or, more formally, the ‘World Commission on Environment and Development’—introduced the concept of ‘Sustainable Development’.

Perhaps because of the origin of the initial Stockholm framework and the Bruntland Report, the responsibility for addressing environmental issues had often been regarded as a subject for political decisions, and for individual action through the environmental movement and action groups such as Greenpeace and the World Wildlife Fund. However, the Bruntland Commission started to focus more on resources and the future, and introduced the notion of the current generation—‘us’—being responsible for providing adequately for future generations. While this was a radical shift, the report was still written for the United Nations, with its inevitable focus on government policy and implementation.

Over the next 15 years or so, the focus for action remained high level government policy and individual action. However, by the second
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half of the 1990s, institutional awareness of the need for action was becoming evident. In 1996 the Institution of Engineers, Australia (now Engineers Australia) presented a report entitled ‘Changing the Culture: Engineering Education into the Future’ which enshrined the notion that sustainability was not simply an ‘add-on’ to engineering education, to enable engineers to mollify governments and environmental activists; rather, it was an integral part of engineering education. The impact of initiatives like this is slowly flowing through to the professional practice of engineering and other disciplines.

Recent developments in the energy debate have brought a sharper focus to this topic, with global warming, climate changes and reduction in CO2 emissions being a major focus. However, there is also a growing realisation that the whole concept of development, and especially urban development, must fundamentally change. This book is a very broad overview of the sorts of changes in attitude which have resulted from our gradual adoption of a development approach which enshrines sustainability, and the creation of future environments which are able to be maintained with available resources. It is, at the same time, a summary of past actions, an analysis of how these actions are performing, of how they can be improved, and a detailed consideration of technological and management issues which have to be addressed to enable continued progress.

This book is not based on a single disciplinary perspective, but addresses the many issues which arise in the development process: land use planning, provision of essential resources (apart from energy), the design of urban systems (with a strong focus on transport), detailed engineering issues associated with our built environment, and the management of the development process. The variety of topics covered in the book is an illustration of the complexity of the development process itself, a process which has, in the past, been neglected owing to the focus on the economic viability of projects. While this is, of course, still essential if development is to proceed, what this book highlights is that there are mechanisms for actors in the industry to ensure that sustainability and the protection of the environment can be successfully incorporated into development projects. For example, the book starts with a chapter outlining an integrated approach to planning, but also includes a chapter detailing the approaches which can be used to deliver fresh water for human consumption in a sustainable manner.

The integration of all the disciplines relevant to sustainable development in this book presents readers with the opportunity to find the latest thinking and research on high level decision support systems for sustainable development in the domains of planning, transport and management. At the same time, it presents examples and theoretical foundations for key specific issues which will be faced in the development process—issues such as understanding pollutant run-off from roads into waterways and techniques to manage this, or insights into what will make people choose public over private transport.

This book makes a valuable and important contribution to the process of sustainable development, and will be invaluable for academics, with recent research findings from many disciplines brought together in a single book. It will also be a valuable resource for the development industry, as it highlights alternatives and approaches which can deliver on the promise of sustainable development.