

Ronald Mascitelli, *The Lean Design Guidebook: everything your product development team needs to slash manufacturing cost, Technology Perspectives*, Northridge, CA (2004; ISBN 0-9662697-2-1, 312 pages, \$44.95)

Review by Stephen Emmitt<sup>1</sup>

Lean thinking is concerned with getting things right at the outset of a project and so 'lean' design (or perhaps more correctly lean design management) is crucial in helping to reduce waste and maximize value through all stages of construction. It is an area that needs to be explored and developed further by practitioners and academics alike and an area in which architects and engineers would welcome some practical advice. Thus a book claiming to deal with lean design is worth a look.

The *Lean Design Guide Book* is a quick reference guide to the main concepts and techniques of lean manufacturing. The book comprises six sections that are designed to take the reader on a journey through the development of new products. Broken down into relatively short sections, the book provides a very brief overview of the main concepts; then a description of a variety of proven 'lean' tools and a brief checklist of the potential advantages and disadvantages of each. The author makes a good argument for incorporating lean thinking and lean tools into the development of new products, and as the sub-title clearly states the emphasis is firmly on reducing manufacturing costs while maximising value.

Part I deals with 'The Business of Lean' and it is clear from the outset that this book is more concerned with cost cutting than it is with design, a theme continued in Part II where readers are urged to consider cost from the very beginning of a project. This is set against customer needs and their prioritization, which, if read alongside a good book on client briefing for construction projects, would provide some useful guidance. Part III deals with cross-product synergy and it is here that readers who are not involved in the mass production of building components or volumetric production of building types may start to question the relevance of the work to their interests. However, there are still plenty of tools that could be of practical value to architects and engineers if one 'reads between the lines' and engages in a little lateral thinking. Part IV tackles cost leverage in conceptual design and direct costs are 'attacked' during the detailed design stage in Part VI. These two sections sit either side of a description of Toyota's 3P process in Part V. There is considerable emphasis on value engineering at the conceptual design stage and the 'quick-look value engineering event' is a very useful tool for starting to think a little more about the function and value of design elements. It is here that the checklists are perhaps the most useful and nearly all would translate well to building projects. The book concludes with a rather obvious and over simplistic view about lean being 'green.'

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The book has been written in a very informal manner and this may not suit the taste of all readers, however, the simplicity of the text and illustrations is effective in getting over the main ideas quickly and effectively and helps to compensate for the over personal style of the author. There are a few references to further reading, but readers looking for theoretical constructs and copious references should look elsewhere: it is not that type of book. The rather direct approach is refreshing and the author's willingness to state the blindingly obvious throughout the book will help to debunk some of the hype surrounding much of the literature on lean manufacturing.

The main question that must be addressed relates to the book's appropriateness to those engaged in design and construction activities related to buildings. For those concerned solely with the manufacture of building products and components (i.e. lean manufacturing) the book will provide a number of useful tools. Similarly, readers committed to the ideal of construction as a manufacturing process will also find some comfort in the contents of this book. However, for readers concerned with the more subtle phenomena associated with the complex interaction of organizations, individuals and associated cultures at the start of the building design process the book may be less useful. The process of client briefing (programming) and the team assembly stages that colour subsequent design decisions are missing and arguably these can only be addressed in a book dedicated to lean construction. Perhaps it semantics, but it is difficult to see where the book deals with 'design' *per se*, and architects and engineers may need some convincing as to the book's relevance to their daily practice.

Lean construction is an emergent field and in the absence of appropriate books that address lean design for construction projects this book goes some way in filling a useful, if temporary, gap in the literature. Lean construction is difficult to define since it means many things to many people, but what we do know is that it is much, much more than lean manufacturing. In consequence, this book is useful in helping to highlight the fact that we need a range of accessible and relevant books that deal with lean design management and lean construction of buildings: hopefully we will not have to wait too long.