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Book Review:

Emerging Perceptions of Research by Design

Towards a Responsive Practice



Review of *Design Innovation for the Built Environment: Research by Design and the Renovation of Practice*, by Michael U. Hensel (ed.).

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The built environment is designed and created in a field of tension between reason, emotion, and intuition. Accordingly, the making of a built environment is the manifestation of the ability to conceptualise, coordinate, and execute the idea of building. This act must furthermore be rooted in humane tradition. Nevertheless, it necessitates an inclusive and holistic understanding of the role of knowledge in designing responsive built environments while comprehending how to integrate different modes of knowledge production in the process of designing those environments.

Over the past three decades, we have been witnessing a number of contradictory and dramatic changes in the structure of contemporary societies that range from the rise of the creative class in some cities to the rise of limited-income populations in other cities. These changes are manifested in phenomenal issues and affairs that pertain to the built environment, including the spectacle of globalised cities, the emergence of housing problems, the deterioration of the built heritage, the rising complexity of large structures and the emergence of new building types, the expanding interest in environmental conservation and protection, and the disintegration and fragmentation of urban structures, among many other issues. While these phenomena continue to exist, demands for multiple types of knowledge are clearly escalating.

A new publication brings together some of the most thoughtful and provocative ideas about the present and the future of practice and pedagogy in built environment-related disciplines, as well as how they can be adopted and adapted to promote and support design innovation. *Design Innovation for the Built Environment: Research by Design and the Renovation of Practice*—which is edited by Michael U. Hensel, an architect, professor, and expert in architecture tectonics at the Oslo School of Architecture—brings in one volume 16 chapters by over 20 scholars and academics from around the globe. They consider the unique nature of design innovation, how the role of research and knowledge in design is changing, and how it might change to shape a better future of practice.

Envisioning architecture and built environment professions into their roots, *Design Innovation for the Built Environment: Research by Design and the Renovation of Practice* instigates a responsive discourse into the postulation that research by design is an emerging inter-trans-disciplinary field. In this respect, I argue that research by design involves multiple frameworks that encompass various theoretical underpinnings and a wide spectrum of

approaches, conceptual instruments, and practical tools utilized to shape the built environment of the future.

In this book, Hensel skilfully puts together 16 contributions of committed expert academics and professionals into a unified whole that speaks to both the academic community and built environment professionals. While the book involves a considerable number of ideas and practical applications that articulate the call for integrating research into practice and knowledge into design, Hensel does not claim, and rightly so, that the book is inclusive of the broad spectrum of existing approaches, nor is it an encyclopaedic volume. Rather, it is developed with the intention to advance the debate on pressing and timely issues that pertain to the role of research and knowledge in design, as well as how such a role can invigorate professional practice in architecture, urban design, and planning.

Hensel sets the stage for the whole book in a short and concise introduction. He reminds the reader with a call for effective disciplinary relations between built environment professions and humanities and natural sciences. When reading his introduction, I was prompted to think of the Roman architect Marcus Pollio Vitruvius,¹ who maintained that a good building should satisfy the three conditions of *firmitas* (firmness or durability), *utilitas* (convenience or durability), and *venustas* (beauty or delight). In durability terms, it should stand up robustly and remain in good condition. In utility terms, it should be useful and function well for the people using it. In beauty terms, it should delight people, raise their spirits, and meet their aspirations. In essence, this reflects the multifaceted nature of knowledge in design, but one can see two major types of identifications: a) knowledge about people in relation to the built environment and b) knowledge about the physical condition of a product, a building, or a portion of a human-made environment. No doubt, design professions have been struggling throughout history to address such a tie to humanities and social and natural sciences. Depending on the predominant schools of thought, from pre-modern times to modernism to later in postmodernism and until today, this tie was materialized in various forms and with varying degrees of success and failure.

Whereas the preceding understanding is easier said than practised, Hensel calls for the need to think of the long-term objective of research and the necessity for an enhanced understanding of the modes of inquiry and knowledge production. One more time, I refer to Vitruvius, who debated that “...Architects who have aimed at acquiring manual skills without scholarship have never been able to reach a position to correspond with their pains...” I argue here that Hensel’s call is rooted in architecture and built environment professions and what is new in this book is a significant contribution to the field of design research for an essential purpose: rejuvenating practice.

Conceiving knowledge in built environment education and practice, I argue that there are two distinct—yet related—types.² The first type is knowledge resulted from research that seeks to understand the future through a better understanding of the past—research that tests accepted ideas. The second is knowledge resulting from research that probes new ideas and principles that will shape the future—research that develops new visions and verifies new hypotheses. Still, the typical debate about the role of knowledge and research in architecture as an academic discipline and a profession continues to exist. Within the framework of these knowledge types, the book places emphasis on the second type and centres its arguments on the modes of knowledge acquisition and production during the process of creating built environments.

While the 16 contributions are not classified into sections that group those of similar nature in arguments or cases together, the hierarchy of issues presented is well-taken into consideration in the sequential arrangement of the chapters. The way I read the book is that the first four contributions pave the road for understanding ‘research by design,’ offering overviews and theoretical perspectives within the context of Europe and North America. Yet,

the contributions that follow present cases and practical applications based on conceptual frameworks and theoretical models are applied to different contexts, either in design pedagogy or in design practice.

In his chapter, David Leatherbarrow introduces the project of design research as a serious endeavour that should be seen from the perspective of positioning architecture in society: architecture's cultural role. He refers to facts and probabilities as important issues differentiating between research on one hand and design on the other. He also refers to research as project-making and emphasizes the level of uncertainty involved in trying to reach an outcome. Such a discourse reveals the need to rethink the integrative nature of research and design as discussed earlier by John Zeisel,³ since each uses the other to do more than either one can do alone. Design uses research to improve and expand the level of knowledge utilized. Research uses design to close the gap between theories and real life situations or simulated real life conditions, while offering practical solutions to real and genuine problems.

In two stimulating background chapters, one by Christopher Hight and the other by Halina Dunin-Woyseth and Fredrik Nilsson, design research notions, evolutions, and paradigms are discerned. On the one hand, Hight advances the discussion on establishing an ecology of design through a narrative on the nature and the evolution of design research. However, he places emphasis on the recent interpretation of design research that signifies innovation associated with material experimentation, complex geometry, and parametric design. Hight maintains that there is a shift of design research from "critical practice" to "innovation." While such a shift is questionable, the argument he puts forth attempts to validate it. On the other hand, Dunin-Woyseth and Nilsson offer an overview on how research by design has emerged and evolved in a number of European countries, with a special focus on practice-based research and the modes of knowledge production. Notably, the authors have been engaged in this discourse since the mid-1990s, especially with the establishment of the Doctoral program at AHO–Oslo School of Architecture.⁴

Mark Burry emphasises the need for addressing the challenges of enabling trans-disciplinarity in design pedagogy, research, and practice. He starts his chapter with a triggering question about the way in which we should move from promoting the quest for excellence within individual design disciplines to stressing the wider role of design, aiding professionals to confront challenging issues. In an eloquent analytical discussion, Burry identifies the obstacles to collective creativity beyond individual disciplines. In this respect, while I relate his arguments to emphasise the value of design research literature developed in the 1970s and 1980s,⁵ I also direct the reader's attention to the methods and tools developed as part of collaborative design processes tailored to address real environmental design issues.⁶ These complement Burry's call for integrating trans-disciplinarity into a radical rethinking of postgraduate programs in design.

All other chapters in the book are evocative and advocate the need for going beyond traditional practices, introducing concepts such as reality studio, relational practice, and systems and performance-oriented design, while emphasizing the transdisciplinary nature of the practice of creating built environments. Strikingly, the ideas generated in these chapters are experienced within the contemporary limitations of schools or practices. This in fact portrays their palpable contribution. They will certainly provoke new discussions, patterns, and standards concerning design innovation and research by design in the built environment.

This book is a must-read by both academics and practitioners in built environment-related disciplines. While there has been—and still is—a continuous questioning among educators and designers about the role of knowledge and research in design, this book accentuates the value of research by design in renovating practices. Hensel and his associate contributors provide the channel for the academic and professional communities to appreciate the potential opportunities that research and knowledge can create toward fostering a

responsive built environment education and practice that address the nature and spirit of our times.

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¹ See Morgan, M. H. (1960). *Vitruvius: Ten Books on Architecture*, (Translation), Dover Publications, New York. See also Salama, A. M. (2007). Book Review: Nikos A. Salingaros: *A New Vitruvius for 21st Century Architecture and Urbanism*. *Archnet-IJAR-International Journal of Architectural Research*, Volume 1, Issue 2, Archnet @ MIT School of Architecture and Planning, Cambridge, Massachusetts, United States, PP. 114-131

² See Salama, A. M. (2008). *A Theory for Integrating Knowledge in Architectural Design Education*. *Archnet-IJAR-International Journal of Architectural Research*, Volume 2, Issue 1, Archnet @ MIT School of Architecture and Planning, Cambridge, Massachusetts, United States, PP. 100-128.

³ See Zeisel, J. (2006). *Inquiry by Design: Environment/Behavior/Neuroscience in Architecture, Interiors, Landscape, and Planning*, W.W. Norton, New York. (1st edition was published in 1981).

⁴ See Nilsson, F. (2004). *Transdisciplinarity and Architectural Design: On Knowledge Production through the Practice of Architecture*. In H. Dunin-Woyseth and L M Nielsen (eds.), *the Nordic Reader 2004-Discussing Transdisciplinarity, Making Professions and the New Mode of Knowledge Production*. Oslo School of Architecture, PP. 30-47. Also see Dunin-Woyseth, H. (2002). *Making Based Knowledge: Between Identity and Change* In A. M. Salama, W. O'Reilly, and K. Noschis (eds.), *Architectural Education Today: Cross Cultural Perspectives*, Comportments, Lausanne, Switzerland. pp. 17-23.

⁵ See Broadbent, G. (1973). *Design in Architecture: Architecture and the Human Sciences*. New York: David Fulton Publishers. Also see Heath, T. (1984). *Method in Architecture*, Chishester: John Wiley & Sons.

⁶ See Sanoff, H. (1992). *Integrating Programming, Evaluation, and Participation in Design: A Theory Z Approach*, London: Avebury.