

## Book Review: Lean Project Delivery - Building Championship Project Teams

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### Introduction

This review aims at sharing with the Lean Construction Institute's audience some comments about the book recently written by David Umstot and Dan Fauchier: *Lean Project Delivery - Building Championship Project Teams* (ISBN: 9781975684013), published by Armchair ePublishing. Umstot's and Fauchier's experiences as professionals and consultants, in the construction industry in a multitude of projects and scenarios, support their narrative and enriches the discussion about Lean tools and their implementation presented to practitioners and academics alike. The book reviews existing ideas and nicely package them to a broad audience interested in learning about Lean Project Delivery (LPD).

The book takes the readers on a journey that starts with a discussion of what is Lean and goes through important tenets of the Lean literature and how they are applied in the construction industry under the Lean Construction philosophy. The book wisely ends with a chapter entitled "Pulling it all together: how to create and sustain Lean organizations" offering pieces of advice on how an organization should move on with their Lean efforts. The chapters can be read in the order they are set in the book to support the authors' thoughtful approach to group closely related concepts and tools in chapters next to one another. Alternatively, the reader might decide to venture through the book looking for low hanging fruits such as root cause analysis, A3 reports, or value stream maps, which are tools that support the analysis of a current state and the planning of future/improved states.

Remarkably, the book offers a very impressive collection of images related to Lean implementation especially in office settings. Pictures, graphs, copies of documents provide the reader with a clear picture of how rooms are set up to promote collaborative planning sessions, how short interval production schedules (SIPS) and *takt* planning look like, and how A3s are put together. Through their extensive network of industry practitioners, the authors have amassed what is arguably one of the best set of illustrations to support LPD. These visual representations are accompanied by detailed explanations of how they were used and the context in which they were developed.

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## Chapter by Chapter Analysis

A chapter by chapter analysis is offered to help the reader get familiar with, and gauge the applicability of, the contents for their needs.

While Chapter 1 offers a brief description of what is Lean to situate the reader, right on chapter 2, the reader is presented with “the compelling case and need for project delivery”, which offers a number of reasons why the industry should embrace Lean and the benefits of doing so. Chapter 3 presents the origins of Lean Project Delivery. The chapter starts with a number of quotes and lists, which might not flow like a text. However, Ohno’s quotes provide rich ground for questioning the status-quo before his seven types of waste are introduced and Liker’s Toyota Way 14 principles are presented. Later, in chapter 3, a timeline indicating the contributions of some of the early Lean Construction pioneers is presented. This timeline is a nice effort to track the origins of the Lean Construction movement, however, given the extent of the global community engaged in the International Group of Lean Construction (IGLC) and its efforts in supporting the movement, many important names are omitted in this list which is United States-centric and mostly LCI-based (assuming that the book was written having the United States audience in mind). Some of the omissions of those who have diligently worked to advance theory and practice abroad include, but are not limited to: Luis Alarcon, Christine Pasquire, Carlos Formoso, and Rafael Sacks.

Next, chapters 4 and 5 also offer data and practical pieces of advice collected from the available literature on Lean implementation and how to overcome challenges related to making owners and teams open to change. These chapters focus on the importance of assembling teams and setting them up for successful collaboration.

At this point, one could argue that enough attention is not paid to construction site operations, and in a future review of this book or a follow up one, the authors could address this issue. A field practitioner might crave for additional details about specific construction operations, being offered at the same level office-related tasks receive in this book. The bias of the authors might be related to their long experience in working on planning and design initiatives, but it might also be related to the fact that the book offers enough detail about the practices and tools presented and leaves it up to the reader to further adapt them to their needs. This is not a book about any specific trade in the owner-architecture-engineering-construction (OAEC) sector, but at the same time it addresses the needs of them all.

Chapters 6, 7, and 8 start focusing on operational processes to promote stability and reduce unwanted variability effects. Initially, a discussion of the 5S method (sort, set to order, shine, standardize, and sustain) is presented as a foundational cycle to promote continuous improvement. Subsequently, the Last Planner® System (LPS®) of production control is introduced to further advance the reader’s knowledge on how to promote stable and reliable systems through the participative planning routines espoused by the LPS®. One word of caution to the reader: pictures of pull planning boards abound in this chapter providing a rich visual description of these meetings; however, the LPS® is much more than a set of pull planning boards, as the authors aptly described in the text. Nonetheless, the pictures perpetuate the image of LPS® as pull planning in office/trailer settings, whereas important routines (e.g., preparing lookahead plans, screening tasks for constraints and working on the make ready process) associated with the LPS® are not shown in the same level of detail. A more detailed review of existing literature would have revealed

longstanding challenges related to improving lookahead plans to improve system reliability (Ballard 1997, Hamzeh et al. 2008, Britt et al. 2014) and a number of new indicators to support this effort (Hamzeh and Ardidi 2013, Samad et al. 2017).

It is commendable that “the visual workplace” and “the root cause analysis”, important components to promote learning and continuous improvement in Lean systems, and the LPS®, have dedicated chapters (respectively Chapters 8 and 9). Chapter 8 highlights the importance of having the workplace communicate with its users and promote transparent and accessible use of information to all stakeholders working to deliver a project. The chapter is richly illustrated with examples of dashboards, A3 reports, graphs, annotated plans, and schedules. Chapter 9 describes the root cause analysis process from defining the problem to addressing its root causes. This chapter finishes with examples illustrating the process in practical cases.

Chapters 10 and 11 go nicely together as the former addresses A3 problem solving and reporting and the latter introduces value stream mapping (VSM). These two tools are essential building blocks of the continuous improvement mentality found in Lean organizations. The A3 chapter nicely discusses the steps to create an A3 and report on a specific issue moving from a current situation to a desired state or solution. A set of A3 examples is provided in the end of this chapter illustrating how rich, yet concise, these reports are. Chapter 11 demystifies VSM and immensely contributes to having people try to map different processes that might otherwise be overlooked. It does so by providing examples of what can be mapped and how, so that no rock is left unturned as processes are mapped.

Towards the end of the book, Chapter 12 introduces Target Value Design (TVD) with a detailed practical description of the process alongside illustrations revealing how the decision-making process unfolds and how decisions are tracked against relevant indicators. Practitioners will likely find this chapter very informative and hands on, a great portion of the TVD literature is very prescriptive, offering overarching principles, but might lack in details related to application.

Chapter 13 offers a perspective of Just in Time (JIT) applied in the OAEC industry and how the Lean community has worked to operationalize it through the use of location-based systems, including *takt* planning, and off-site fabrication. This is a very abbreviated discussion of the topic, when compared to the prominent role JIT has taken since the origins of the Toyota Production System, where Lean Production originated. However, it points the reader to the need to carefully plan the product and the system’s design before JIT can be fully implemented.

Chapter 14 offers ideas on how to make learning Lean a fun experience; this could be one of the first chapters in the book to help readers practice and experience the benefits of Lean in the OAEC industry. It indicates a number of simulation activities that organizations can use to demonstrate the benefits and routines related to the Lean Project Delivery. Chapter 15 wraps it all together by addressing potential challenges faced during the implementation of Lean and ideas related to overcoming these barriers.

## Final Remarks

In summary, this is a well-organized book about practical aspects of the Lean Project Delivery. It serves well practitioners and academics looking for practical information on Lean implementation, and it has chapters appropriate for people with different levels of



Lean Construction knowledge. The examples and illustrations provided by the authors are very rich and help the reader ground the concepts on practical solutions already tested in projects.

From an academic standpoint, the reader will notice that the book lacks a more extensive review and critical discussion of the literature, however, the authors cover relevant and current references throughout the text. The low number of citations throughout the text, and their presentation in an isolated fashion (i.e., one reference at a time, mostly in long blocks), makes it more readable for a broader audience which is the target of this book. Finally, a list of references is offered in the end of the book alongside a list of videos referred by the authors. The curious reader can search for additional information on the topics discussed and many of the references used are easily accessible online to promote additional learning on the topics discussed.

This book is highly recommended for practitioners trying to embark on a Lean journey on their projects or to be read as part of a book club or an entire course on Lean Construction. It offers a fresh and grounded perspective on the implementation of Lean Project Delivery systems and hands on information to take the first steps or advance the journey to new levels.

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