



I know this is way overdue and the later it gets the harder it is to step up and finish. So I apologize and won't let it happen again. I am watching how I use my time more carefully now hoping to find a way to hand work off to others. Most of my time is spent on the phone talking to people – writers, association leaders, academics, practitioners and on, or answering email and connecting people with one another and with Lean Construction principles and practices.

I will start with a digression, a reflection, an offer, then coming events, interesting links and connections and a review of the **FMI Annual Productivity Report**. I close with a long section reporting what I have been up to from the most recent backwards.

## An Opening Digression

**Dick Bayer** has done a super job of organizing LCI and promoting Lean Construction and the industry is better for it. LCI is in a time of growth and transition; It is time to take LCI to the next level, to become a force for transforming the industry. The new Board of Directors is coming together, our relationships with other industry associations are developing and the impact of Lean Construction principles and practices are moving in from far left field to middle of the road. (That line will surely win the 2012 Mixed Metaphor prize.)

And I was taken aback by Dick's characterization of LCI's administrative history. The words stung, others called or emailed me to complain so I called and sent an email to Dick and told him what I thought. I urged him not to say anything more about it, to not draw any more attention. His apology on the phone was heartfelt and easy for me to accept and move on. I understand, believe me I understand, how trying to be humorous can lead you right off a cliff. And then he sent me the note he wanted to publish in response. It touched me; it touched Dana deeply for its powerful and deeply human message. (And I never knew Dana had kissed me when I fell asleep at that meeting.) He in his courage and thoughtfulness turned what looked like a bad thing into something wonderful and my world is a better place. Now I thinking of all the times I failed to apologize or say thank-you or just clean up a mess and what I need to do now.

## Reflection

The **Lean Software Systems Conference** invited me to give the 2nd day keynote at their meeting in Boston on Tuesday next week. The invitation came from **David Anderson**, a leading thinker in the application of lean principles and practices in the development of software. His wrote a fascinating book, "**Kanban**" for applications in software. I am neither an easy nor relaxed speaker in the best circumstances—despite appearances for sure—and I'm even less easy outside the Lean Construction community. So I read his books and another by Donald Reinertsd "**The Principles of Product Development Flow**". And I sampled the related blog posts and online papers. I checked in with **Mary Poppendieck**, a leader in the software community. Long ago she traveled with **Paul Reiser** and me when we introduced Lean Construction to a number of the Boldt offices in Wisconsin.

I discovered that **David Anderson** had read **Goldratt's** books and they had had a great influence.



The simulation we use and seminars, “**Parade of Trades**”, is based on an example in “The Goal.” David focused his attention on reducing work-in-progress and developed a way to apply that thinking in software. As we think the Last Planner is the key to a long-term improvement process, he says that Kanban serves in the same way to drive improvement. All of this background work was useful and I still have to figure out what to say.

In preparation, I've been thinking and reflecting on the nature and **magnitude of uncertainty** faced by managers in construction; How uncertainty connects to or informs how managers determine and apply time, money or resource contingencies. This reopened my interest in organizations and the balance between central authority/control and distributed decision-making. We have data that shows that project managers face significant uncertainty in relation to “What” they are building and “How” as late as the start of construction. And to make matters worse, they significantly underestimate the magnitude of that uncertainty 85% of the time. So how do they protect themselves from both unpredictable workflow and significant end and means uncertainty on traditional projects? I have written about this before and am developing some research initiatives with students and faculty.

A tantalizing line of thinking in this area is from the US military. I urge you to get and read “[Power to the Edge: Command and Control in the Information Age](#)” (Professor Ray Levitt at Stanford put me onto this a few months ago. He has a knack for this sort of thing and a long-standing interest in organizational theory and practice. He has provided key readings at just the right moment since maybe 1985.) This book argues that the traditions of command-and-control and silo organizations are no longer effective in a network centric world. They propose that the power to make decisions will shift to the edge of battle as opposed to being maintained in a remote central command center. And learning will occur also at the edge and can be rapidly shared in the network-connected organization. This is more than rebalancing command and control with distributed decision-making. In this model central command-and-control is replaced by **self-synchronization** in the organization. They identify 4 key assumptions necessary to make this possible.

1. Clear and consistent understanding of command intent;
2. High-quality information and shared situational awareness;
3. Confidence at all levels of the force; and
4. Trust in the information, subordinates, superiors, peers, and equipment.

This is an important book, a reference and source for our community as we move deeper into self-synchronization on site and along supply chains. I would love to put together a group to read and discuss it. **Let me know if you're interested and I'll try to make something happen.**

## An Offer

I have a new copy of the **7th Edition of the Steel Designer's Manual**. Can someone, maybe a student make use of it? **All you have to do is ask.**



## Coming Events, Interesting Links, Awards, Good Ideas and All

### Events:

My next event after setting up our lawn sprinklers this weekend is to deliver a keynote to the [Lean Software Systems Conference](#) in Boston. Come if you can. This will be a challenge and it may be fun. I have read a lot of background material including David Anderson's book "Kanban" and find their Lean initiative was inspired in part by Goldratt because of his challenge to reduce work-in-process where ours was to increase the predictability of workflow. Unfortunately, I scheduled this before the Academic Forum was set so will miss that.

Next comes another keynote, this time to the **Mexican Society of Civil Engineers** followed by an **Introduction to Lean Construction** both in Guadalajara. I have an almost 10 year relationship with Engineer and Professor **Balthazar Nissim** there. I am hoping we can use this to launch a significant effort in Mexico to connect a number of smaller initiatives already underway.

Plan now to attend the **3rd Annual Joint LCI/CURT** meeting set for Saint Louis on June 13th followed there by the **Joint LCI/P2SL Design Forum** on June 14/15. You should be able to register now on <http://www.curt.org/Events.aspx> and [LCI site](#) for these events.

### Links:

The **AIA** has released survey results and 12 expanded IPD case studies. Take a look at the [press release](#).

### Innovation

Jonathon Lehrer, author of "How We Decide" has a new book, "**Imagine**" on innovation. He traces the rise of collaboration and how the design of spaces – big rooms? – supports innovation. I also saw him speak on Book TV this weekend. His presentation is not yet available on Booktv.com but should be soon.

### Leadership

I have been thinking about leadership a lot recently, trying to find a solid perspective. Here are some links worth exploring. **Roberto Charon** of LPC sent me a fascinating link on [leadership and transparency](#).

**Steve Knapp** also from LPC sent a link to interviews with Patrick Lencioni on his new book, "**Advantage**". (Read Patrick Lencioni's books if you haven't. I'll be you will find several to share and discuss with your management team.):

- <http://worldleadersconference.com/videos/dave-ramsey-interviews-patrick-lencioni/>
- <http://managementconsultingnews.com/2012/04/post-podcast-patrick-lencioni/>



Will Lichtig from Boldt sent a link to one of my favorite blogs, [Work Matters](#) by Bob Sutton.

And from the [TED](#) series.

## An Award

The paper, “**Motivation and incentives in relational contracts**” by Joel Darrington of Hanson Bridges, published in Journal of Financial Management of Property and Construction has been chosen as an Outstanding Paper Award Winner at the Literati Network Awards for Excellence 2012. The full 2012 results will be published at [www.emeraldinsight.com/literati](http://www.emeraldinsight.com/literati) shortly.

## A Report

Mike Casten recently forwarded a link to “[The 2012 U.S. Construction Industry FMI Productivity Report](#)” as some interesting statistics but most are hard to judge because sample size and the roles of responders isn’t established. FMI itself challenges some of the statistics because their experience is at odds with those reported in the survey. Okay, indulge me for a moment. I am trying to understand the survey.

Sections of the report are devoted to perceptions productivity and the Trends, Project Planning Processes, Internal and Controllable Variables Effect on Productivity, and in a section called Other Productivity Drivers, Building Information Modeling, Integrated Project Delivery, Lean Management Practices, and Prefabrication. Productivity is reported improved in each of these last areas. There are no questions relating to specific Lean Construction principles or practices in the survey; more general opinions are reported. In Exhibit 18, 72% of responders said that they were familiar with Lean management practices and how Lean might help you improve productivity. I was surprised, maybe astounded that 72% of company leaders reported they were familiar with Lean management. And then I read the next question. Of those familiar with Lean management 42% believe that “Lean is really just good management practices that have been relabeled and branded” while 28% marked “I understand Lean very well and see it as a practical way to improve productivity and/or operational performance.”

I would certainly agree with the 42% that say lean is good management practice and I disagree that Lean is a relabeled or branded version of traditionally understood “good” project management practices. Traditional project management practice fails to measure and improve the performance of the planning system. Percent Plan Complete (PPC) is the essential 1st measure of the organization's ability to manage production. On the other hand, this report gives us a sense of the status of the industry and the opportunity before us. Take a look at the report and make your own conclusions.

## A Reverse Calendar Review

April 23rd, Glendale Arizona: **LCI meets with DBIA** leadership to find common ground and mutual opportunities. It turns out that LCI has three Board Members who also serve on the DBIA board. **Mark Konchar** from Balfour Beatty, **Dave Crawford** from Sundt and **Vic Sanvido**.



They joined Dick Bayer and me for a long lunch meeting with the executive leadership of DBIA. It looks like we can work out a mutually advantageous set of education and training offers and maybe engage them in leading edge research. Details as they happen.

April 16 & 17, **Trane Strategic Partner Meeting** in Orlando. This was my 2nd opportunity to speak to this organization. I arrived there straight from 3 weeks in Turkey (that was a vacation and I met three Engineers in Bursa who are eager to learn about Lean Construction and start an LCI there – I am on that case. Deep in jet lag, I checked in and went straight to the welcome dinner. Loaded my plate and looked for a place to sit and there was **Don Wojtkowski** who led the first IPD project at Cardinal Glennon and **Mark Bengard** from Murphy Mechanical and others from St. Louis. (Dennis Lavalley of The St. Louis Council of Construction Consumers sponsored an Introduction to Lean Construction back in 2002.) It was super to catch up with Don and Mark. Along the way I discovered that **Trane** is now using lean in manufacturing. I am working to get them to more directly support LCI.

March 24th – April 14th, On vacation in Turkey. I'll focus on the ruins and leave the wonderful food, people, history, museums and mosques and all for later. We visited archeological sites great and small and always had the same three questions. "Why? Why here? And the big one How? The Romans had a pressurized water system at Ephesus and we saw maybe 40 ton pillars made from not local stone standing plumb.

March 21st, **Albuquerque Community of Practice** offered an **Introduction to Lean Construction**. **Morgan Kramm** of WH Pacific did the heavy lifting to organize the event. It was great to be back in Albuquerque – lots of older now friends and the same great food. The [Improve Group](#) provided a super venue. We improvised a little on the standard Introduction to Lean Construction by adding three short cases along the way. The first, presented by **Charles Rountree** from Denver, connected leading edge safety research to the Parade of Trades simulation. Charles has been applying High Reliability and organizational resilience approaches drawn from Weick, Hollnagel and Dekker. (I can send articles and more references if you want.) Charles spoke about increasing resilience in organizations and super discussion followed. The importance of resilience was apparent in the later presentation by **Hap Richardson** of Richardson and Richardson. He contrasted his company's experience on a lean and non-lean projects. **Morgan Kramm** closed the day by reporting his use of Last Planner® on a variety of design projects for the Sandia National Laboratories. It was a long and powerful day made better by old friends: **Professor Jerry Rounds** from UNM brought a number of students to the meeting, And there was **Aaron Rodgers** who was with Gamblin and Rodgers back in the 1980s. His company opened projects to us where data collected by Frank Yeh, a grad student from Taiwan recorded every step in the installation of over 300 light fixtures. The data showed how supervision improved performance as they decoupled steps in the operation by establishing inventory between steps in the operation and increased the availability of shared resources. (Again, copy on request).

The meeting reminded me that research is a long cycle investment. Theory develops from



observing practices in the field and understanding why people do what they do in face of hard reality. Simulations make visible the connections between theory and practice provide powerful tools for both research and practice. Lessons learned in the Lego Airplane simulation about batch size and pull opened new thinking.

On March 20th, I was the keynote speaker at the [Tradeline Conference](#) devoted to **Lean Construction**. This was surely the best organized, well run such meeting I have ever attended. It was great to catch up with old friends and colleagues. I tried in my presentation, “There’s no turning back” to make the case that principles and practices of lean construction were shifting the paradigm, the way we understand and act. And this new philosophy was creating a coherent approach to managing projects that aligned commercial terms, organizational practices and “operating system.” Always nervous when I try something new, I got rattled by having my paper go-by sheets out of order. The audience and sponsors were kind. Having said that, the attendance and response at the Tradeline Conference made the case that there is no turning back. I heard none of the skepticism and hostility that accompanied large meetings devoted to Lean Construction a year or two in the past. Presentations, breakout sessions and conversations focused on how owners, designers, contractors and building officials find advantages applying the principles and practices of Lean Construction. **Sue Klawans** from Gilbane deserves special thanks for helping me manage the breakout session devoted Implementing Lean Construction. She recorded comments and key points, kept me on track and contributed to the conversation.

I was surprised by the number of people who reported apply Lean Construction on projects where 2 of 3 key players were engaged. Many attending the discussion on implementation are working on just such projects applying lean construction principles and practices. Every possible combination was represented and all wished they were 3 for 3. A lot of people are trying lots of things to make it so.

March 8th, I set personal record for the longest travel for the shortest presentation. This is true and misleading – I flew about 2000 miles to Toronto for a 6 minute 40 second presentation. The [presentation](#) was my second in the series of seven “**Columbia Building Intelligence Program**” think tanks sponsored by Old Castle Glass and organized by the Graduate School of Architecture, Planning and Preservation at Columbia University. This final meeting “**Toronto - Vectored Resources**” was built around 4 topics each with a panel of 5 “[Pecha-Kucha](#)” style presentations followed by about 45 minutes of discussion. Pecha-Kucha, like being shot in the morning, concentrates the mind. PowerPoint advances automatically every 20 seconds so text rich long explanations won’t do. Clearly framed, blunt photo or graphic rich presentations work. (Reality check, reading aloud this paragraph aloud takes longer than the time allowed for 2 or 3 slides.)

A moderator led the panel discussions first with questions to presenters and then expanded it to include presenters from other sessions and finally to the larger audience. Making strong clear points in presentation brings focus to the discussion; questions and the answers were direct. The 5 presentations in each panel took about 35 minutes and leaving 45 minutes for discussion.



**Bob Simmons** of [ConXtech](#) and I were in the second session, “**Assemblies + Systems**” that involving the integration of manufactured components into systems for deployment in to elements of the built environment. Bob made his case for a “**Chassis Based**” approach to structure by noting the variety of human forms all built on the same chassis.

My presentation explored the nature and extent of uncertainty in projects and the consequences on logistics and supply. Organizing speedy and efficient supply chains is difficult (impossible?) because designers, constructors and project managers in current practice are unable to accurately assess the nature and extent of uncertainty in projects. In about 85% of the cases, they underestimate the extent of uncertainty in terms of what is to be built and how. This surprising data was first collected in the late 1980s and more recent data says little has changed on traditionally managed project. Contingencies hidden in schedules (and budgets) to absorb that uncertainty would tend to either drive larger inventories of commodities closer to the project and reduce the opportunity for preassembly, or to extend project duration while supply chains are organized. I closed by presenting early data showing that managers on lean projects report far less uncertainty and suggested this contributes to reducing cost and duration and improved safety.

**Paul Sheely** of [Tremco Canada](#) reported the company has achieved a zero-landfill and their difficulties working on Public Private Partnership (PPP) projects. **Jim Barrett**, National Director – Integrated Building Solutions for Turner Construction was in the following session devoted to “Design + Development”.

I left convinced that shorter presentations can, with preparation and practice, improve discussion and learning.

February 23rd: **The American Council of Construction Educators (ACCE)** invited me to speak on Lean Construction to their **Annual Meeting** on February 23rd. ACCE accredits Construction Management programs and is rethinking that process. I proposed that Lean Construction (LC) should become an integral part of the required curriculum. Students graduating with an ACCE accredited degree will be better prepared for work in industry; the conceptual foundations that support LC open the possibility of research beyond the current boundaries of Construction Management and provide the academic rigor necessary for wider acceptance of Construction Education. The Parade of Trades™ supported these claims and gave us a chance to explore and connect construction education and theory. It was great fun as I have a lot of friends among the faculty in ACCE programs. Two reconnections of the many stand out, **Professor Bill McManus**, University of Oklahoma – he worked on the Chocolate Bayou project where I met **Glenn Ballard**, and **Lee Orosco**, a long time advocate for Lean from my days in New Mexico.

Faculty at ACCE schools are interested in Lean Construction and many are adding it to courses. It will be worth the effort and time to build capability in ACCE programs and include LC in



## Lean Construction Institute

Building Knowledge in Design and Construction

accredited curriculum.

February 20 & 21st, **The Annual Midyear Meeting** of the **International Group for Lean Construction**. We met online this year and it mostly worked. **Professor Tommelein** organized a classroom at UC Berkeley connected using Skype Video with others in Israel, Denmark and as far as San Diego. We caught up on research initiatives, did some planning for the IGLC meeting this year in San Diego. I am confident that the 20th IGLC set for San Diego is going to set a new standard.

*Greg*