



March 19, 2013

33 years ago, just now, we - Glenn Ballard, Mike Casten, Howard Peak, Professor John Borcharding, yours truly (YT) and some I can't remember - held a seminar, "Managing for Productivity" at the Stanford Court Hotel in San Francisco. We chose that fine hotel because we wanted to attract senior executives. Neither Glenn, Mike nor I can remember the others, maybe Professor Henry Parker from Stanford, and all three of us recall being more than nervous about our presentations. Glenn, Mike and John and YT had worked together on the Chocolate Bayou Project near Alvin Texas. Prof. Richard Tucker from University of Texas led the consulting team. He was motivated to start the Construction Industry Institute (CII) because of the potential he saw in the collaboration between the designer/contractor Brown and Root and Monsanto.

That was then. This is now. Finding the place to start these notes is always the hard. I could tell here the story of how Dana and I thought through the alternatives. Engrossed with an audio book late in the day, we drove past the last open service station in an empty part of Idaho. We realized this when the low fuel warning came on 35 empty mountain miles from home. But I won't.

Now I want to build on earlier posts about the real dilemmas of collaboration and trust. Start here [Trust](#). Don't read on until you watch this short. It is funny; our belief about what is supposed to happen is contradicted by what does happen. Miscommunication can put those who trust another in danger. It reminds me of the protocols on the bridge ships in the U.S. Navy for giving orders; the helmsman echoes the instruction and then reports when it has been carried out. The loop is closed when acknowledged by the Officer of the Deck. Neat and clean, if a bit much for day-to-day work.

I have been collecting material on collaboration from different disciplines. Sam Bowles is an economist. Sociologists explore the issue in terms of social dilemmas - the sort of thing that happens when you agree to split the check at a restaurant. As in the work of Bowles, moral forces or sentiments are in place. While everything may appear to be on the restaurant table, each person has a sort balance sheet. Their behavior depends on the size of the group, the length and nature of the relationships, past ordering practice, the likelihood of another such evening, who had only a salad or ordered the rather expensive bottle of wine are all in play. Future dinners or long term relationships can be challenged when someone often takes advantage.

Collaboration offers us the opportunity to create results inconceivable in current practice and we need be mindful of the circumstance and risk. The lowest risk is found in small groups of diverse people who have long-term perspectives and who are likely to work together in the future. And don't kid yourself. People cheat. Dan Ariely's Ted Lectures, [Our Buggy Moral Code](#) and in blog note [Heath Brothers - Questions for Dan Ariely](#) explore how and when people in groups cheat. The blog provides specific advice for establishing environments to decrease dishonesty. Both links will provoke reflection and discussion in planning, forming & participating on an IPD team.



**An Alert:** I will be exploring issues of trust, risk, uncertainty, organizational structure and such twice in Denver on April 4th & 5th. See the LCI Website for more information: [Conversations on Lean Construction](#)

The American Association of Cost Engineers asked me to make a presentation to their annual meeting in South Lake Tahoe on February 22nd. The original plan was to make a presentation to small group beginning with Parade of Trades. The plan changed to a larger room with up to 170 participants. This was a challenge because my original plan was to use the simulation to challenge the idea that all costs within an account arise in that account. This is a fundamental principle of accounting. Big sweat: I can't run the simulation, collect results and explore the implications in 1.5 hours. So I try something new.

I opened with a 20-minute history of the development of Lean Construction from the discovery of unreliable workflow through Last Planner to Integrated Project Delivery. I proposed we now saw that traditional practice caused money to move across boundaries and reduced performance. In effect, unpredictable workflow adds cost to downstream tasks when they don't have enough work to keep their crews busy. And we also understood that the high transaction cost of moving money across boundaries on traditional projects reduced innovation.

The Parade of Trades illustrated the first point. I was able to run it quickly by eliminating rolling and recording. I prepared a sheet for each trade showing the pieces of work they would pick from the upstream trade each week. These instruction sheets were prepared based on the data from an actual simulation. Each trade had their own sheet showing the week they started work, and how many pieces of work they moved each week. We set 8 small tall cocktail tables across the front of the room so the work in process at each station could be seen from anywhere in the room. 35 coffee cups were stacked on "**Work**" the first table. Trade workers came on the project in sequence one week apart. The concrete worker picked 5 cups off of **Work** as shown on the score sheet and placed them on the **Concrete** table. In the second week, the Mason took 3 cups off **Concrete** and placed them on **Mason** while the Concrete worker picked the 4 from **Work**, and so on.

The project moved smoothly and quickly. The state of the project could be seen and the unfolding situation easily understood. I stopped work when a large inventory of idle inventory became apparent on **Mason** table. Pre-assigned roles - Superintendent, Cost Control and Scheduling - gave their advice and we held a short conversation with audience. Then the simulation ran to finish and the results of their work, new data on 1000 with each die runs and a cool movie of the simulation from Prof. Min Liu's student at NCSU were presented in PowerPoint. We discussed the causes, problems of unpredictable flow and the opportunities for innovation opened by allowing money to move across boundaries for 45 Minutes. The formal session closed and conversation ran almost 2 more hours.

**Looking for help:**



# Lean Construction Institute

Building Knowledge in Design and Construction

**IPD Performance:** Lonnie Andrews from Pankow sent me this request. Pankow is supporting the development of a paper for the 2014 Construction Engineering Conference. The main focus the role background education and experience plays in the success of IPD delivery teams. This short survey is confidential and will take less than 5 minutes. The objective is to analyze: 1. What education/training and professional experience different project members have, and 2. How such background knowledge affects the extent to which IPD is implemented, and project teams behave: [IPD Survey](#) .

**Are Projects Managed on a Lean Basis Safer:** Please let me know if you have any data relating changes in various safety measures on lean projects as compared with those managed on a traditional basis.

## LINKS

An article on Modular Construction from the AGC Constructor Magazine: [AGC Off Site Modular Construction](#)

And one from Orlando on the application of Lean Construction: [Lean In Orlando](#)

And [Lean Design in Healthcare Facilities](#)

A Folly: [Lets Dance](#)

*Greg*