

# Minutes

## LCI Design Forum

### Chicago, June 16-17, 2005

*Chair: David Mar*

*Facilitator: Glenn Ballard*

The second meeting of the Design Forum was held in Chicago June 16-17, 2005 and attended by about 30 people. The meeting started with eight presentations and one panel, each followed by intense discussion, then group discussion of two selected topics. We followed the routine of recording key points and questions after each 'presentation'.

Presentation slides and audio recordings of each presentation will shortly be found at [www.leanconstruction.org/files](http://www.leanconstruction.org/files). Presenters should have sent Greg Howell their presentations, but it's not too late to do the right thing!

*Please send feedback on these minutes to Glenn Ballard, [gballard@leanconstruction.org](mailto:gballard@leanconstruction.org), 415-710-5531.*

### **Presentations: Key Points and Questions**

#### **Laura Lesniewski, BNIM, & David Mar, Tipping-Mar Associates: Adventures in set based design and more**

- Cost is big driver
- ID value early
- Design in the open
- Passive cost model vs active
- A/E could "sell" owner on spending more \$
- Create transparency of different options
- Lack of trust between architect and contractor (traditional)
- Fluctuating value system
- Lack of common language
- Value design vs traditional value engineering
- Client not interested in optimizing
- Project options mapped against values of owner
- Design is not a democratic process
- Applicability to DD process
- How can you have an "integrated design" without including constructors in SD?
- How do you make sure that the "customer" is the arbiter of value rather than the A/E?

## **Rick Linley, Smith-Carter: the Integrated Design Process on a Manitoba Hydro project**

- Player who can make decisions
- Treat each job as if fast track
- Delayed decision making by Board
- Project charter developed by “team”
- Value of crucial conversations
- Need to revise belief systems
- Thinking of buildings as investments vs costs
- Owner holding all contracts
- Using pull scheduling in design
- Industry resistance
- Could the same process work with more up-front cost conscious owner and achieve same quality?
- How does the contract method determine the leadership and control of transactions?
- Does any architect provide an owner’s manual?
- How does pull scheduling work in design? How to use it to work with owners regarding decision making?
- Is there cost growth vs cost moving?
- Bidding transparency and owner value
- What do you do with space buffers that are built-in in the later stages?
- Does the depth of the SD process give the team confidence to do a fast track process?

## **Jamie Hammond, ADePT Management Ltd.: ADePT-the cornerstone of effective design management**

- Design team too close to solution
- It’s all about funding and eliminating waste
- Must have decision makers available
- Help designers understand impact of design decisions
- New model for delivery calls for level of expertise in numbers that do not currently exist within the industry
- Invest in design apprentices
- Need to understand drivers of behavior
- Must have organization that understands lean principles before request “lean” from others
- Root cause for low PPC?
- Explain DSM.
- Shuld they have started over?
- What is the impact of moving from deliverables to BIM on DSM process?
- How to clarify negative iteration?
- When to “stop the line”?
- Quality of designers?

- How should we be educating design managers?

**Philip Sun, Harris County Hospital District: Durable Decisions—a process for lean construction**

- Need to explore if personal schedules conflict with project schedules
- Psychology of team formation important to obtain true collaboration
- Need to identify project drivers
- ID project decision makers
- Explore and learn what customer really needs/wants
- Truth vs facts
- Power of the sign-off
- What ethical questions did arise?
- Elaborate “card trick” method.
- Conflict between who participates and who decides
- Do you map both the current process and the desired future state process?

**Will Lichtig, Scott Muxen, Dave Pixley, Dean Reed: panel discussion on design management at Sutter Health**

- Learning from challenges
- Self-built teams
- Management systems allowed failures to become visible
- Breakthrough follows breakdown
- Say more about CM
- Say more about TVD
- What skill set is Sutter Health looking for from the design/construction community?
- If skill sets are not available, what is Sutter Health prepared to do?

**Owen Matthews, IPD: “Integrated Project Delivery—Improving the design process”**

- People have more fun doing work this way
- Able to tap the ingenuity of the entire team
- Mountain climber analogy—all tied together
- Monthly breakfast meetings—increased social bonds
- Willingness to explore outlandish ideas
- Did the engineers experience cultural barriers?
- Strategic alliance with Florida Power & Light?
- How determine profit distribution?
- How to acquire work?
- How to benchmark performance?
- Do members of IPD work outside the IPD envelope?
- Are IPD projects more profitable?
- Does leadership change based on project type?

- Does IPD have rules? Are these documented?
- Is the risk shared?
- How do you manage the relationship?
- How do you shift between IPD and traditional work?
- What do you look for in the invited GC?
- Did IPD grow out of frustration with traditional methods?
- What is the incentive to improve under cost-plus-fee?
- What can we learn and use from IPD's experience?

**Paul Reiser, Boldt: “Report on the building of a design management process”**

- Share incomplete information early and often
- Embed cost model
- Hold SD until have full program
- Process map helps team identify problems/opportunities
- Vision set by document
- Explain shop drawing charrettes

**Cliff Moser, RTKL: “Drawing kanbans for OSHPD”**

- Adapted manufacturing tool for use in non-mfg setting
- Great tool for tracking drawing changes-disappointing that only gets used where legislated
- OSHPD as customer
- Concept of flow
- Documents as “inventory” until published
- Took a breakdown to create breakthrough
- Did kanban remain active until the end?
- Explain how work was defined as inventory
- How did the process change affect productivity?
- Did it promote collaboration or more isolated work?

**Zofia Rybkowski, UC Berkeley: “Toward product and service differentiation in the AEC industry”**

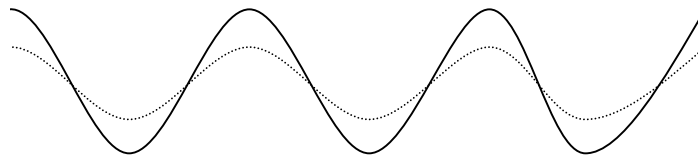
- Focus on basic lean principles and application
- Mine literature on the Toyota Production System to find applicable concepts
- Measure items and tie to rewards that increase value in the system
- Integration is the answer

**Group Discussion: How to manage demand variation in a multiproject environment?** *[notes from Zofia Rybkowski]*

- Can either reduce demand variability or *increase team flexibility*.
- Identify what team can do and shift staff. Share people among firms.
- Sometimes demand variability can be fixed simply by scheduling tasks differently. i.e. Hospitals that schedule surgery on T, W, Th may appear to be all full. However, it is not

always necessary to build a new hospital—just reschedule for additional surgery times. Instead of building new waiting room to avoid crowds, put a sign on the door asking people to not crowd about.

- Firm can create own workable backlog for low demand times. i.e. good time to develop standardized details
- Cross-train employees, making them multi-skilled
- Can use additional time, when demand shrinks, to develop employees i.e. Google gives employees every Friday to pursue their own projects and ideas.
- Overbook, then work late to fulfill client's needs when overbooked.
- One problem is that clients tend to take a long time to review a firm's submission, causing starts and stops. One way to avoid this is to make clients part of the design team so they understand what is going on and feel a sense of urgency. Hold charrettes so decisions are made on the spot rather than postponed for subsequent client review.
- Principals have been known to offer up their bonuses to help compensate employees during slow times.
- Reserve a small % of employees' salaries during busy times to create a slush fund that will help compensate them during lean times. This can help smooth some of the peaks and valleys:



- Do “luncheon learns,” go to job sites, or send people home when times are very slow. Although these are not billable hours, they are value-added.
- One way to manage an owner who cannot respond in a timely manner is to break work down into bite-sized pieces. Consider institutionalizing it and using the same worksheets and matrices from project-to-project. Group members will experience success faster if they are work in smaller pieces.
- Have employees appear for work according to an honor system, i.e. stay late if have extra work and leave early if they don't.
- Offer clients a discount if they agree to schedule their project flexibly.
- Charge clients more for certain types of projects that cost a project more to design.

**Group Discussion: How to implement lean in one's own firm?** [*Notes from Zofia Rybkowski*]

- Try set-based design.
- Look at how beer client, for example, moves products around with forklift and notice inefficiencies.
- Try management software such as SCRUM.
- Don't allow client to change criteria
- Consider hiring own estimator or hiring an unbiased 3<sup>rd</sup> party to estimate.
- Move construction services to preconstruction, so design is done earlier, reducing overall costs.
- Cannot introduce creativity until have stability. Make lean a priority in your firm. For example, one participant is putting all projects on the “last planner” system by a specific date (i.e. July 4). Note commitments, successes, failures of PPC and why certain tasks

didn't get done. This identifies breakdowns in the process. Black boxes are OK as long as we know what the handoffs are.

- Create roles and responsibilities matrices.

## ***The best analogies/images***

“Sounds like the story about the fleas that all got together and bought their own dog!” Ed Beck

“As much as I would like to be thought of as a Gucci handbag, ....” David Mar

## ***Task Forces***

Topics for possible task forces were identified by the group and are listed below. Leaders who volunteered in the meeting are noted with their task force topic and will shortly distribute invitations to participate on their teams. Those who would like to participate on an existing task force should contact the task force leader. Please send requests for additional task forces, or offers to lead a task force, to Glenn Ballard at [gballard@leanconstruction.org](mailto:gballard@leanconstruction.org), or 415.710.5531. Task force reports will be included in future Design Forum meetings.

- Document Quality—Cliff Moser ([cmoser@rtkl.com](mailto:cmoser@rtkl.com), 213.591.0411)
- Planning and Control in Design—Dean Reed ([deanr@dprinc.com](mailto:deanr@dprinc.com), 650.207.3486)
- Academic Research—Tariq Abdelhamid ([tabdelha@msu.edu](mailto:tabdelha@msu.edu), 517.432.6188). Tariq heads the LCI Academic Forum. This is not a separate task force, but rather coordination between the two forums to make known relevant design management research from which industry practitioners can benefit, and to communicate topics and issues on which research is needed.
- Value-based compensation

## ***Topics Suggested for next Design Forum meeting***

- Offer by Todd Brink: ½ day value stream mapping of design process
- Offer by Will Lichtig & Dean Reed: CMG Incentive Program
- Offer by James Choo: Last Planner in Design
- Offer by Cliff Moser: Document quality
- Request from group: Metrics analyzing value overall (ROI)
- Request from group: Identify issues and put together panels to address
- Request from group: Identify problems/challenges and get volunteers to address

The next meeting will be held on the West Coast in early December, 2005. Please send offers and requests regarding that meeting to Glenn Ballard ([gballard@leanconstruction.org](mailto:gballard@leanconstruction.org), 415.710.5531).

### ***Plus/Delta (captured at end of day Thurs & Fri)***

#### **Plus**

- Philip's sharing of methodology
- Size of group
- Collective passion
- Progress report from Laura and David
- Report on IPD
- Willingness to share 'mistakes' and actions taken in learning
- Sustainability may force integration
- Sutter panel discussion about obstacles
- Key points and questions captured
- Discussion after presentations
- Format of key points & questions
- Facilitation and flexibility

#### **Delta**

- Do away with agenda-increase 'informality'
- Increase inroads to architectural community
- Earlier information about content
- Take message to owners
- Press people who did not show
- Meet in the city, not in the 'burbs'
- Meeting rooms with windows
- Invite facility managers, insurance companies, NorCal design community