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LCI POSITION PAPER ON THE CONSTRUCTION LABOR SHORTAGE

There is universal agreement that shortage of skilled workers is a major problem confronting the U.S. construction industry. To date, there has also been wide agreement that this problem is to be solved by marketing. We disagree. Indeed, we see the marketing approach as an attempt to make the worse appear better. And working in construction is for the most part extremely unattractive. By far the majority of potential employees face a future of low pay, little opportunity for advancement, non-involvement in improving working conditions or project/company performance, and high risk to life and limb.

Construction jobs must be made more valuable to workers and project management must stop wasting labor. This paper explains our position and presents our thoughts on how to implement this two part solution to the problem of scarce construction labor.

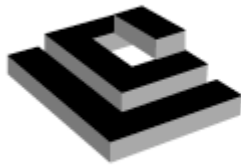
Understanding the problem

There are two primary causes for the shortage in construction labor: 1) Construction jobs offer too little value to workers, and 2) Project management practices waste labor.

The negative features of construction jobs

- Low pay
- Unsafe
- Poor working conditions
- Lack of advancement opportunity
- Command and control culture

We recognize that there are also positive features of construction jobs, but they are wildly insufficient to offset the negative. How many of us advise our children to become a construction worker? At least at a fast food restaurant, they would be less likely to be injured!



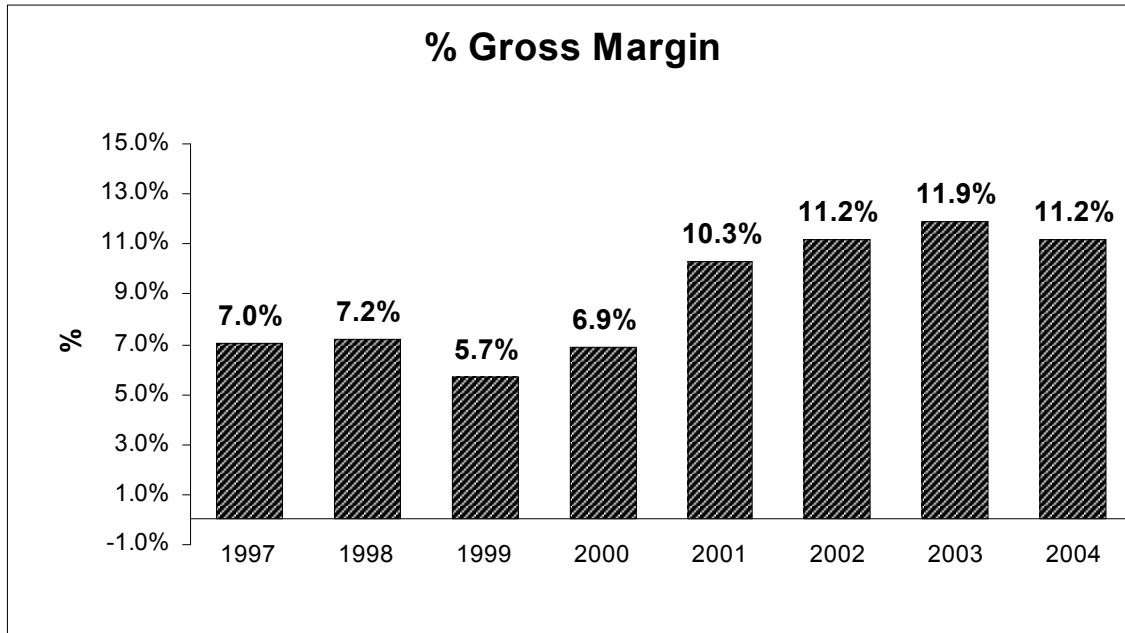
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Failure to adequately manage projects increases the need for labor and wastes labor time

Beginning as far back as 1992, our research has identified traditional project management as a primary cause for low construction labor productivity and poor project performance overall. In construction, work is passed from one worker or work group to another. Schedules are the means for downstream work groups planning and preparing for future work. Unfortunately, in the construction industry, the completion percentage of tasks on weekly work plans is commonly around 50%. This low plan reliability steals from workers and teams the advantages of planning, and forces them to a strategy of flexibility, consequences of which include low labor and equipment utilization.

Lean construction is a solution to this problem. While traditional project management uses a schedule-push approach, insisting that contractors and workers do what **SHOULD** be done, followers of lean construction use a team approach to planning; make ready planned tasks so they **CAN** be done; allow on weekly or daily work plans only those tasks that meet quality criteria for definition, soundness, sequence and size; anchor commitments in the spirit and practice of reliable promising; and systematically learn from plan failures.

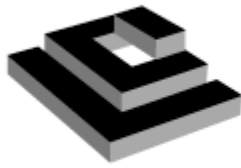
Lean construction has improved plan reliability, thereby enabling labor productivity improvement and increases in contractor profitability. Graña y Montero, one of the two largest contractors in Peru, is one outstanding example of the benefits to be gained from lean construction.



Graña y Montero's profitability improvement since introducing lean construction in late 1999.

Other features of traditional project management also contribute to the waste of labor. Here are but a few:

- Sequential processing leads to stop-start
- Products are not designed for buildability
- Operations are not adequately planned



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Solving the problem

If the shortage of construction labor is caused by the combined effect of unattractive jobs and wasteful management practices, the solution is obviously to make jobs more attractive and to change management practices. In the massive, highly fragmented U.S. construction industry, that will be a huge challenge, but there is no viable alternative, so we had best get at it.

Make construction jobs more attractive

What's needed is to:

- Increase compensation; both wages and benefits
- Reduce the risk of accident and injury
- Implement quality of work life programs in contracting firms and on construction projects
- Make workers responsible for operations design and control
- Provide clear and explicit processes for career advancement of construction workers

Change management practices

As regards changing management practices, we see two main initiatives:

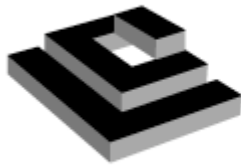
1. Implement the Lean Project Delivery System
2. Minimize the total head count on construction projects

Implementing the Lean Project Delivery System yields:

- More reliable work flow/handoffs between work groups
- Systematic prefabrication and modularization, which shifts labor into shop conditions, improving safety, quality, time and cost
- More buildable product designs
- Better planned construction operations; safer, fewer defects and less rework, faster installation, and lower cost

Minimizing the total head count on construction projects will be achieved by:

- Using composite crews (and designing products and processes accordingly)
- Using other-craft workers under competent supervision from the relevant craft



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- Adjusting compensation rates to encourage workers skilled in one craft staying on the project to work in a different craft—and paying for the difference through increased overall productivity



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AN INVITATION TO A SYMPOSIUM ON THE CONSTRUCTION LABOR SHORTAGE

LCI and the New Mexico AGC are co-hosting a symposium on the construction labor shortage in Albuquerque, May 10-11, 2005. We invite all interested parties to attend and to help define the problem and develop solutions—**including those who disagree with our position**. Please contact Glenn Ballard at gballard@leanconstruction.org or 415.710.5531 if you would like to make a presentation at the symposium. The desired outcome from the symposium is agreement on a plan and to the initial actions needed to implement that plan.