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Cultivating a Lean Culture:

Its Relevance to You
and Your Firm



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Cultivating a Lean Culture: Its Relevance to You and Your Firm

Q & A by Trudy Shay Petty with Chuck Greco, President and CEO of Linbeck Group, Vice Chairman of AGC of America's Building Division and Chairman of AGC of America's Lean Construction Forum.

In its simplest form, how do you, AGC and the construction industry define Lean Construction?

Greco: First of all let me clarify I am not a Lean consultant, AGC staff member or creator of Lean Construction. My comments are as a contractor striving to be as lean as possible. In this context, I believe Lean Construction is a set of process improvement ideas and concepts that drive value by optimizing the whole and not the parts. It is done by eliminating what is not necessary to create value and by removing variation from our activities.

The AGC Lean Forum defines Lean Construction as "a set of ideas, practiced by individuals in the construction industry, based in the holistic pursuit of continuous improvements aimed at minimizing costs and maximizing value to clients in all dimensions of the built and natural environment: planning, design, construction, activation, operations, maintenance, salvaging and recycling."

How is Lean Construction the same or different from total quality management (TQM) practices many contractors embraced several years ago and still practice?

Greco: TQM evolved with a focus on the *management of quality*, and what we have realized from Lean

Construction practice and research, the real issue is the *quality of management* – or leadership in how we plan, execute, and control our work.

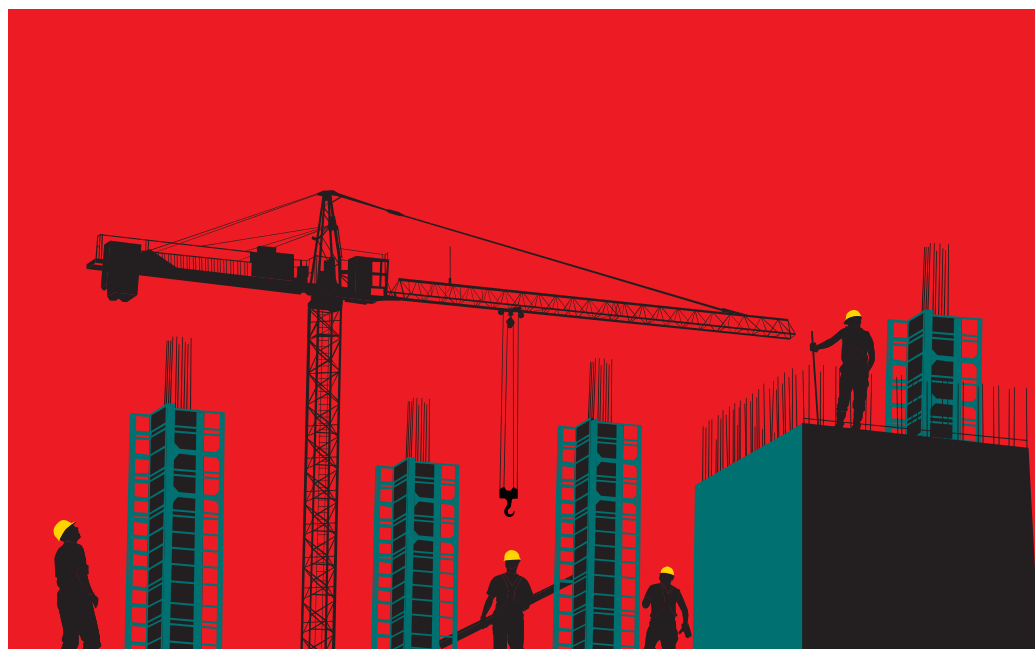
Why is Lean Construction so important to the future of the construction industry?

Greco: First and foremost, Lean Construction is important to the customers we serve as builders and designers. The construction industry should provide services that allow our clients to have a competitive advantage in a world economy.

As industry leaders, our role is to deliver capital projects as effectively as possible, creating value

for those we serve; a lean construction operating system is fundamental in achieving this effectiveness. Lean Construction is important to contractors and designers because it's the only operating system with principles and processes that can be implemented where the opportunity is to create the most value: at the jobsite or in the design meetings.

As an industry professional, Lean Construction is important because it provides a science and vernacular to define and describe the skills necessary to deliver a quality project while optimizing resources of time and money. An unattractive attribute of



our profession is a perception that conflict and long hours are necessary to overcome an expected variance in industry-wide performance. This doesn't have to be the case.

How is Lean superior to other project delivery methods?

Greco: Let's clarify: Lean Construction is not a delivery method such as design-build, CM at risk, or design/bid/build. Lean Construction is an operating system of principles, processes and procedures that can be applied to any delivery method. The ability to leverage all the benefits of a lean operating system is dependent on how collaborative and value-oriented the project delivery process is. For instance, in a design/bid/build environment where the project's business plan and design strategy are not a shared vision with the contractors, Lean Construction would naturally be found only within the general contractor and trade contractor relationships. The value or waste eliminated from the process of construction would be captured and shared with the contractor elements only. It's certainly worth the time and effort for the construction contractors to implement a lean construction operating system to maximize their reliability and enhance profitability as a result of their collaborations.

The other end of the delivery method example would be the result of Lean Construction in an Integrated Project Delivery (IPD) environment. With IPD, a Lean Construction operating system supports all facets of project development from the owner's business plan through optimal design and construction. The ability to create value is expanded over all the phases of project development and consequently shared among all the constituents. To sum up, a Lean Construction operating system will enhance any project delivery method; however, it is

exponentially more powerful as the process becomes more collaborative and inclusive of all the constituents involved.

How is Lean Construction the same or different from a contractor's quality assurance plan or process?

Greco: Lean Construction is much more than a quality assurance process. Traditionally, verification of work being completed right the first time is the responsibility of the quality control function, which typically means inspections. In Lean Construction, quality is built-in to the work process rather than inspected-in later. The basis for our Quality Control Process at Linbeck is the value stream for each quality process in which we have mapped the activities and corresponding logic for implementation of the work. Through this process, a crew is trained to inspect its own work.

Does Lean Construction apply to all aspects of a business (estimating, business development, marketing, safety, office and field construction operations, etc.)?

Greco: In my experience it applies to everything. Lean is applied as a culture to every process that assures the crew on site installing work is safe, has the proper equipment and required materials, and is working with the correct drawings and specifications. Your basic implementation of work is directly or indirectly influenced by every support and operational function of a construction company. So yes, Lean applies to all aspects of a business.

Are we more likely to see Lean Construction practices only embraced by larger contractor firms, and if so, why?

Greco: No. Lean Construction does not require a software product or a machine requiring capital investment, nor does it have a return only on a large scale. Lean Construction requires that we abandon the cul-

ture of being a community of 'knowers' and replace it with a community of 'learners' culture. This might be more easily done with a small community of employees. It is a new process that to be fully realized requires commitment, dedication and time... lots of it.

Are the benefits and viability of Lean Construction practices just as important for smaller and midsize construction firms as it is for larger contractors? And if so why?

Greco: Throughout our lean journey at Linbeck, we have been considered small and mid-sized and I absolutely believe any construction organization stands to gain from the implementation of Lean Construction. The operative question is who does not want to be innovative, competitive, reliable and safer in their construction methods and results?

What does a Lean Construction culture look like to you – what would someone expect to see that demonstrates or signals to them a firm is embracing Lean?

Greco: They will see the following features, aspects, behaviors and attitudes:

- Innovation (doing things in a simpler manner) is OUR job and not just part of it. We innovate, each within their skill, craft and trade, in a way that improves the whole project.



- We come together to learn from each other. A setback or delay is an opportunity to learn and better our process moving forward. Learning by doing and asking instead of telling is our modus operandi.
- Collaboration, communication and trust are the most fundamental principles – that is supported by the company's mission or purpose.
- We will inform design and not just react to it.
- We value-engineer processes and not just product.
- We aim for zero accidents, zero RFIs and a zero punch list.
- The focus is on optimizing the project as a whole – we continually look at all the parts or trades as one unit and reject optimization of the parts individually. The team will strive for workflow reliability in design or in construction and then go for speed.
- The focus is on looking ahead to insure the project is ready for the next step “justifying time” and the team needs to be ready at the same time.



Does the Lean journey have to start with the CEO?

Greco: Yes, but only as a catalyst. The CEO is but one person. The organization has to change as a whole. If the CEO and other executives talk the talk and walk the walk, then it will be taken seriously because of leadership by example.

How widespread is the use of Lean Construction today?

Greco: It's hard to say with any specificity. Our Lean Advisory Group surveyed AGC constituents, and one in seven respondents said they were using some form of lean tools. There was no consistency however, in the group's definition of a Lean Construction operating system.

How has AGC's Lean Construction Forum helped to advance the industry's knowledge of this approach?

Greco: It is a critical mission for the AGC Lean Forum to work with the construction industry to advance the Lean Construction approach. The AGC Lean Forum has specifically focused on facilitating the adoption of Lean Culture, advancement of Lean Concept development, and providing Lean Construction training.

We are addressing these initiatives through live venues, website interaction and education. Our live forum venue is open to all industry professions and presents lean topics and case study examples of lean construction application by first adopters. Attendees learn from the experiences of others what has worked and what has not, as well as the effectiveness of lean techniques. The website www.agcleanforum.org is used to provide Lean Construction information to all individuals interested in a lean journey. The Lean Construction training is fundamental in providing support for lean construction implementation. This lean training is specifically designed for the construction industry and addresses all supervisory levels from craft foreman to CEO.

What do you consider the future of Lean Construction?

Greco: When you consider a basic lean principle is to “seek perfection,” it suggests there is no end to an organization's lean journey. In the 10 years we have instituted the Lean operating system at Linbeck, we have not seen a finish line. It has been quite the opposite, as new concepts of lean thinking, process and techniques are developed and inculcated into our culture.

It is my belief users of our services will acknowledge that it is possible for the industry to provide a better product that will not only affect their business, but their customers' business as well. To create a measurable difference, the process in which we deliver these improved results will have to be different than the current prevailing practice. I suggest the combination of continued advancement of Lean Construction process in conjunction with an awareness of potential outcomes will make Lean operating systems a basic requirement to advanced project delivery.

For a contractor who is focused on surviving these economic times and putting in place what it will take for their firm to re-emerge healthier and stronger as the economy improves, in your opinion, what is the compelling reason for them to pay more attention to Lean Construction practices?

Greco: A possible reality is that these times are forever more (at least for the foreseeable future). The world economy or those forces our industry does not control will effectively not allow our industry to waste capital investments. To be competitive in a more transparent and accessible world, the users of construction services will demand more responsive design and efficient delivery of their facilities. As I see it, the crisis is here and for some of us a sense of urgency. ■