LEAN CONSTRUCTION

Successful projects thanks to lean construction site processes







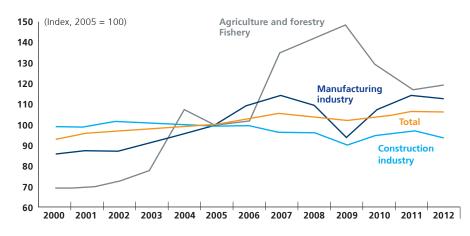
Your Partner on the way to Top-Performance

LEAN CONSTRUCTION ENSURES PROJECT SUCCESS

LEAN CONSTRUCTION is the holistic approach for sustainable results in the realisation of construction projects. Thanks to transparency and measurability at every stage of the implementation, available resources can be used purposefully and waste avoided.

In contrast with other sectors of the economy, productivity in the construction industry is falling. Away from classic construction site management it requires to implement strategic objectives, to achieve shorter lead times with available resources, and to react at frequent intervals when it comes to problems and discrepancies. In the process, the leadership role also changes. Decisions are made on the basis of figures, data and facts. The problem solving competence of employees is systematically improved. The focus of all individual trades at all times is on the entire value stream in the owner's interest.

Industries: productivity per hour*



* Gross domestic product or gross value creation (in real terms, chain index 2005 = 100) per hour worked

> Too many interfaces	> Changes
> Waiting periods	> Missing standards
> Negative multitasking (stop & go)	> Unsynchronised tasks
> Large batch series	> Inappropriate assembly proc





LEAN IN DESIGN AND ENGINEERING

Construction projects these days carry considerably greater risk as the result of shorter project lead times, strict adherence to schedules as well as optimum quality in times of ever increasing project complexity and budgetary constraints. New shapes and forms not only need to offer greater performance, they are also required to be ready for market more quickly. For that reason, the project development process harbours a lot of hidden potential for improvement. To be at the forefront, projects are developed in a partnership and interdisciplinary approach and continued to a high level of maturity – and this applies to the project's entire life cycle.

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LEAN IN CONSTRUCTION SITE PROCESSES

Excellent site processes develop as the result of eliminating and preventing waste combined with a great focus on value added. By applying principles and methods commonly used in other industries across the world, many improvements can be created on a daily basis as the site progresses. Measures are implemented in a timely fashion and their root causes sustainably eliminated with the aid of tried and tested Lean methods. Management continuously increases on-site value added and ensures project results in the interest of the client.

Traditional construction site optimisation

- > Scheduling for time buffers
- > Rigorous management of promise
- > Rescheduling of work packages
- Cost optimisation as the result or supplementary request
- > Resource optimisation at the supplier's
- > Documentation of resolved problems
- > Exchange / Interchange of trade

Lean Construction approach

- > Elimination of waste and buffers within the process
- > Short-cycle real-time communication between construction site and back office
- > Transparent construction site progress with clearly defined work packages
- > Use of standards and modularisation in repeated processes
- > Resource management based on the pull principle and balancing
- > Application of the mentor-mentee principle for a structured problem solving
- > Continuous improvement and follow-up of measures / action tracking

The lean approach stabilises processes combined with the involvement and qualification of employees.

Quick, visible successes are only the starting point.

Daily on-site management ensures the long-term sustainability of performance and progress.

Top performance through **LEAN CONSTRUCTION**

Design to Lean	Multi-project mangement	Project planning based on enginee- red-to-order	Lean site management	
BIM and digitalization	Project controlling and change order management	Cooperative in- house planning of balancing	Cooperative detailed planning on site	
Modularisation and standardisation	Risk management and contract review	Qualification of subcontractors and suppliers	Supply and disposal logistics	
CIP (Continuous Improvement Process)				

*BIM Building Information Modeling

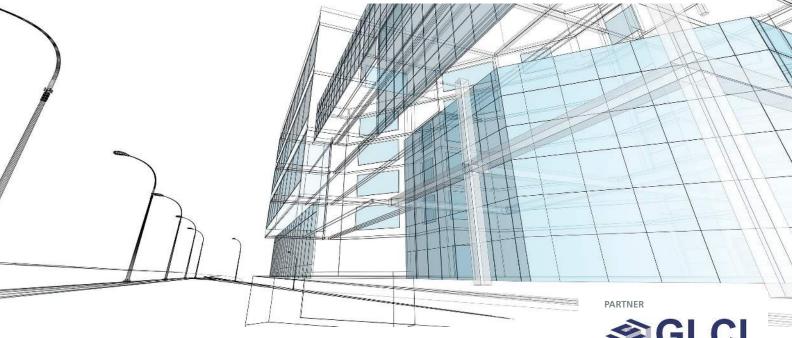
LEAN SITE MANAGEMENT Lean success as the result of leadership input on the construction site

- > Takted regular communication with all trades
- > Prioritisation of daily top problems
- > Go & See to support the improvement culture
- > Structured and long-term problem solving
- > Process confirmation to improve quality, costs and delivery performance



LEAN CONSTRUCTION requires lean project handling in addition to low-waste processes and planning. Lean project handling considers the reduction of lead times from initial design to final customer acceptance, and observes the consistent avoidance of waste during all project stages.

This is successful if lean principles are adhered to and all trades and process stakeholders cooperate on a partnership basis throughout the entire project life cycle.



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