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## Partnering, lean construction and health and safety work on the construction site

### *Co-players or opponents?*

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# PARTNERING, LEAN CONSTRUCTION AND HEALTH AND SAFETY WORK ON THE CONSTRUCTION SITE: CO-PLAYERS OR OPPONENTS?

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*Each new construction project is organised with new clients, consultants and contractors every time. Planning and coordinating the construction process and the specific health and safety work on the construction site must therefore also be organised each time. In recent years, partnering and Lean Construction have been introduced as new forms of cooperation between the actors in construction. Simultaneously, new regulations have been implemented that place the responsibility for health and safety conditions on clients. Partnering and Lean Construction were studied with a focus on the importance of, and interaction with, health and safety on site. Production as well as health and safety are often perceived as two separate areas with different key actors and they are handled as two different management areas with their own embedded management problems. This despite the fact that it has long been known that health and safety is dependent on the organisation and execution of production and that a familiar theme in the management of safety is to avoid a sidecar mode of production. The study applied theories on construction management and construction safety management. The research methods were based on trade analysis and studies of 5 building projects on site. The trade analysis was performed by interviewing focus groups. The construction sites were observed over a six-month period by applying the methods: Observation, documentation and interviews. It was concluded that 1) synergy between partnering and Lean Construction, and health and safety work can be achieved, 2) there has to be a driver to facilitate the interplay between the management areas, 3) all the actors can drive the process, 4) as drivers they have to handle context-dependent dilemmas.*

KEYWORDS: Partnering, Lean Construction, Health & safety, Management, Construction site

## INTRODUCTION

The Sidecar Effect of health and safety (H&S) work has long been a familiar phenomenon (*cf.* Jensen, 2002: 204). Sidecar location characterises a situation where safety is disconnected from the core performance and function in an isolated system – a situation that for years has been criticised for isolating the H&S work.

With the emergence of a series of new partnership models and forms of cooperation, the scene has, however, recent years been set to develop new project governance frames that might be able to move H&S work might away from its location as "sidecar".

Accordingly, the paper explores implications of bringing H&S work in play together with the new forms of partnerships. In doing so, the following objectives have been pursued:

1. What kind of impact would new concepts of partnerships have on H&S work in construction?

2. Could the development and implementation of the new concepts be planned in ways that would also promote good H&S conditions?
3. What role could H&S play in the readjustment of construction?

## METHODS

The project was a qualitative development project designed as an iterative sequence, in which each phase is a precondition for the next phase, with ongoing adjustments and corrections of the field of study, methods and results. The project and method used consisted of the following main phases:

1. Preparation, gathering and systematisation of existing experience with the implementation and utilisation of new concepts of cooperation (Literature study)
2. Gathering of experience of new cooperation concepts and H&S at the construction industry level (Focus group interviews with different actors in the construction industry)

3. Gathering of examples of practice with new cooperation concepts and H&S on the construction-site level (Interviews with different actors on site, observations and data collection in five on-going construction projects)
4. Intervention on construction sites; integration of H&S work in the new concepts of cooperation (Test on five construction project over a one-year period)
5. Analysis of the experiences gathered and development of a guideline of recommendations.

### **FINDINGS**

Concerning H&S work and new forms of cooperation, the following findings were made.

#### **H&S Work and partnering**

H&S work could exploit that partnering established a common forum already in the design phase. This created the possibility that parties could jointly discuss - not only technical construction issues, but also the work environment - opportunities and problems, so that the project was planned to get the most effective and safe project implementation. The early dialogue, the setting of common goals and the ensuing dialogue engendered by common objectives were key elements in the discussion of how partnering could contribute to a common focus on H&S and create new opportunities in the area. Conversely, H&S work activities and H&S actors could contribute to a better planning in a partnering project, so it could proceed without unnecessary stops due to unforeseen H&S problems.

#### **H&S Work and Lean Construction**

In connection with the systematic H&S work working conditions will often be identified where solutions should be found. In the process planning, solutions could often be found to H&S conditions and the solutions could be operationalized. Some of the solutions would also help to improve the production process. Lean Construction and the formal H&S work could support each other. Experience suggested that for example input from the Last Plan System and work place assessment in the early process planning could prevent poor working posture when handling building materials by early planning of scaffolding, and improved logistics. Experience suggested that input from the current H&S work (safety rounds, safety meetings, etc.) to Last Plan System meetings, could support for example clean-up that fences were in order and coordination of the different trade groups' work. In that sense, using the Last Planner System could realise new ways to integrate safety aspects as early

as at the planning and coordination stages of production.

### **CONCLUSIONS: DILEMMAS IN H&S WORK IN CONSTRUCTION**

The results showed that synergy can be achieved between partnering and Lean Construction, and H&S work. There has to be a driver to facilitate the interplay between management areas, and it seemed that all the actors could drive the process. Because construction projects are project-organised, the context, the actors and the actors' interaction will be new each time. This means that every time the actors want to drive the interplay between new partnerships models and H&S, they cannot use routines but have to handle dilemmas which are context-dependent.

The dilemmas for the different actors shown in this paper were:

**Client:** Client demands can act as drivers, but they can also be barriers for developing safety behaviour on site

**Safety coordinator:** Coordination may visualise simplicity/interaction when interfaces are clear but may cause confusion when interfaces are pressed

**Construction manager:** Plans, management and control can promote the production, when craftsmen are not competent, but inhibit production when craftsmen are competent

**Department of H&S:** Documentation may increase oversight and provide a basis for new strategies by the contractor and thus help to solve H&S problems but at the same time increased demand for documentation from the construction sites can take time from problem solving of H&S conditions on site.

**Safety organisation:** In the development of partnerships those converging aspects of H&S are promoted, while other H&S issues risk to be forgotten.

### **ACKNOWLEDGEMENTS**

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