

PHASE SCHEDULE IMPLEMENTATION AND THE IMPACT FOR SUBCONTRACTORS

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1 BACKGROUND AND CURRENT CONDITIONS

- The Phase Schedule is a level of planning in the Last Planner System which is the link between work structuring and production control. It is used to develop a detailed work plan that specifies the handoffs between the specialists and subcontractors involved in that phase (Ballard and Howell, 2003).
- Two metrics used are Percentage of Constraints Removal (PCR) and Percentage of Plan Completed (PPC) with the causes of non-compliance of the activities.
- Little is known about how this planning process influences the practices and performance of the subcontractors in the project.

2 RESEARCH AIM AND METHODOLOGY

This paper aims to understand the impact of the Phase Schedule on the subcontractor's practices and how this process assists the performance and participation of the subcontractors.

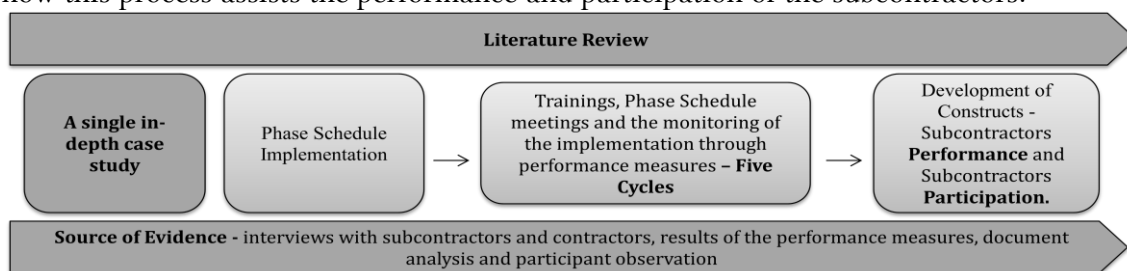


Figure 1 - Research Method

3 RESEARCH FINDINGS

- **Implementation of the LPS focusing on the Phase Schedule**
 1. Phase analysis from the master plan in which the milestones were defined;
 2. Phase Schedule meetings to plan the activities using the “back to forward” technique;
 3. Formalization of the planning by transferring all the information to a worksheet for the monitoring of the constraints and activities planned.
- **Results of Indicators: PPC and PCR**

The PCR results (Figure 2) indicate that most of the constraints identified were the responsibility of the general contractor; however, the subcontractor's constraints also had strong influence. Some constraints were in fact from predecessor activities; so, this required a new analysis.

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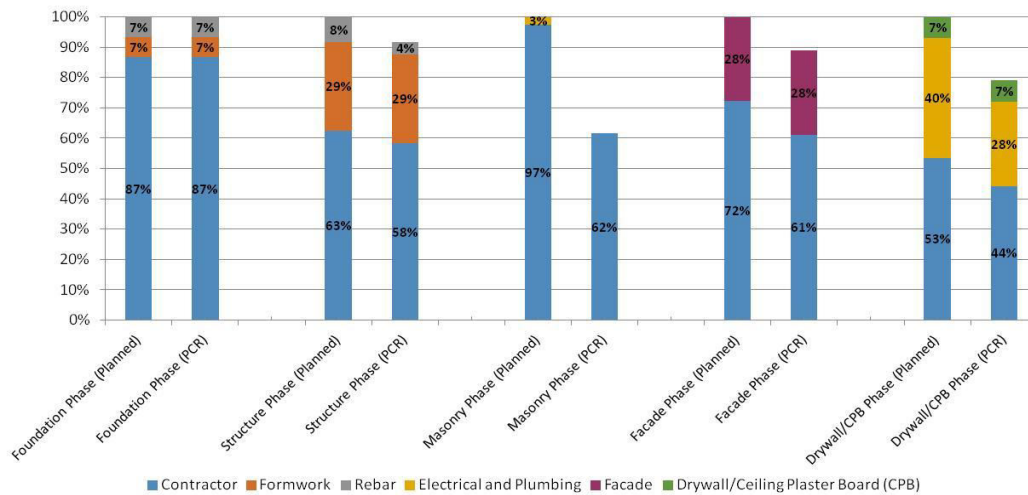


Figure2 - PCR by construction phases analyzed

Based on the weekly PPC result (Figure 3), there is an improvement in the performance of the PPC in the following weeks after the Phase Schedule meetings (weeks 1, 6, 15, 20 and 23). The change of plans at lookahead schedule has significant impact on the performance.

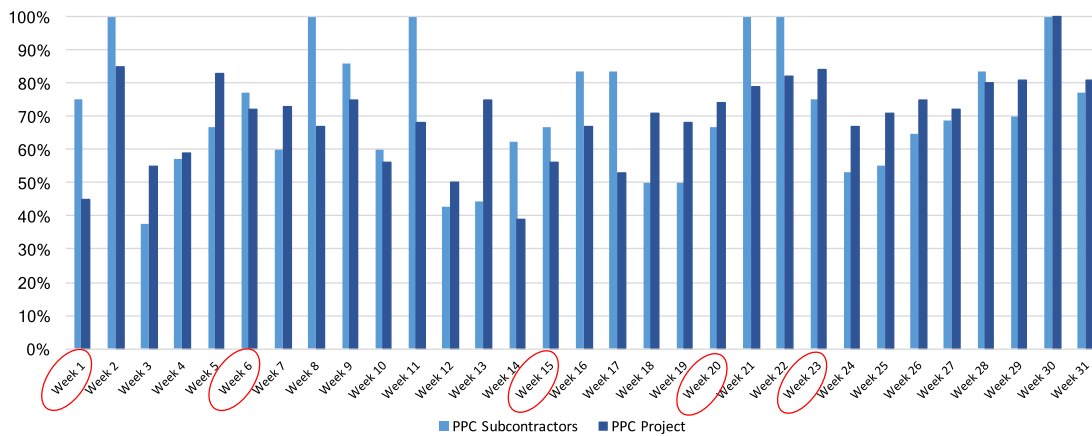


Figure 3 - PPC from Subcontractors and whole project

• **Impacts of the Phase Schedule on Subcontractor's Performance and Participation**

Positive aspects: improvement of the transparency of information, the opportunity to understand the phase and the possibility of collaboration.

Challenges: long duration of the meetings and the high number of activities to be planned.

Performance Construct: the subcontractors achieved good results (average PCR 84% and average PPC 71%).

Participation Construct: the subcontractors presented a low level of resistance related to the adoption of the Phase Schedule.

4 CONCLUSIONS

- Reinforcement of teamwork and the sense of collaboration were identified.
- It was possible to understand the performance of the subcontractors from a quantitative perspective with the PCR and PPC.
- Definition of measures that could analyze the impact of the Phase Schedule as a whole to aligning the short-term work execution planning with the overall Phase Schedule and master schedule targets.

