

COMPARING PRODUCTION DESIGN ACTIVITIES AND LOCATION-BASED PLANNING TOOLS

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1 INTRODUCTION

- Do you know the features, uses and scopes of the **Production System Design (PSD)**, **Work Structuring (WS)** and **Phase Scheduling (PS)**?
- And between the location-based tools of **Line of Balance (LOB)**, **Takt-Time Planning (TTP)** or **Flowline (FL)**?
- Which **location-based tool** is better suited for each one of these **production design activities**?

The research problem

- The production design activities (PSD, WS or PS) have distinctive features, uses and scopes, which are **not very clearly described in the literature**.
- The location-based tools, such as LOB, FL and TTP, structure the work in diverse ways, and it is also important to **clarify the differences among them** and the **potential use**.

Research Aim

Answer these questions through a comparison and deeper understanding of production design activities, as well as the potential uses of location-based tools for production planning and control in each design effort.

The Method

Literature review analyses on main lean terms and tools applied for production system design.

2 FINDINGS

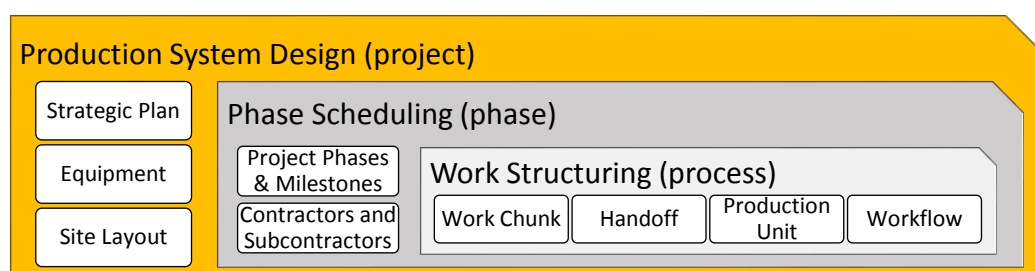


Figure 1: Work structuring is part of the decision scope of production system design and phase scheduling.

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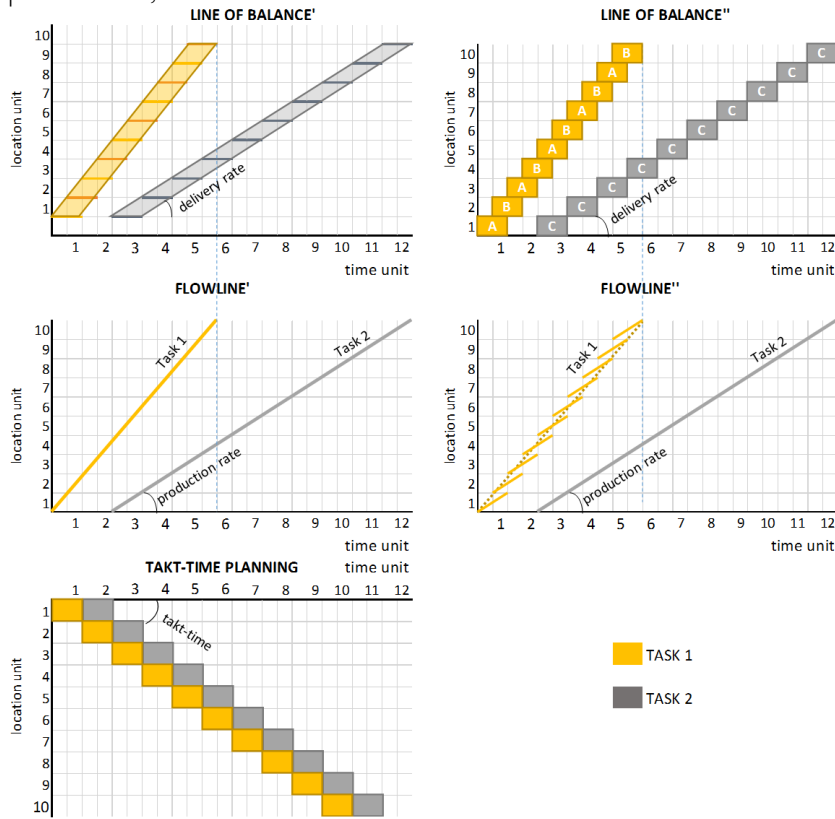


Figure 2: Different construction planning techniques based on location.

	Line of Balance	Flowline	Takt-time Planning
Use of buffers	Buffers inside the work package duration; Buffers between critical activities	Buffers between activities	Buffers inside the work package duration: difference between takt-time and cycle time
Slope of line represents	Delivery pace	Production pace	Takt-time: available production time divided by demand

Table 1: Comparison among the lean tools for construction planning.



3 CONCLUSION

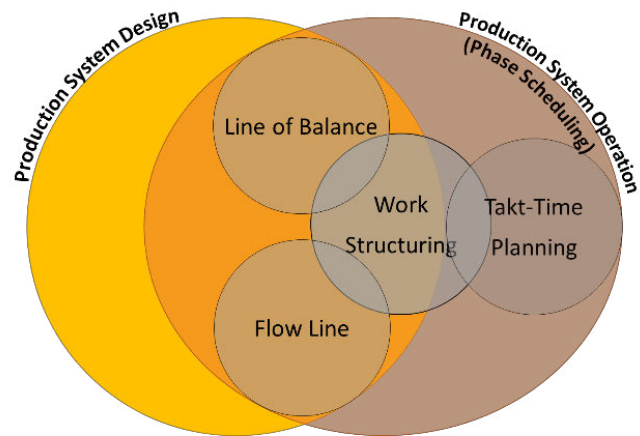


Figure 3: Position of lean tools in relation to planning activities in lean construction management.

