

A MODEL TO LINK TAKT SCHEDULES AND OPERATIONS IN CONSTRUCTION

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Research Objective

Model is to

- Facilitate interaction between managers and workers,
- Be a practical application of takt planning or LBS at the project level,
- Provide a clear overview of activities and labor resources.

Research framework

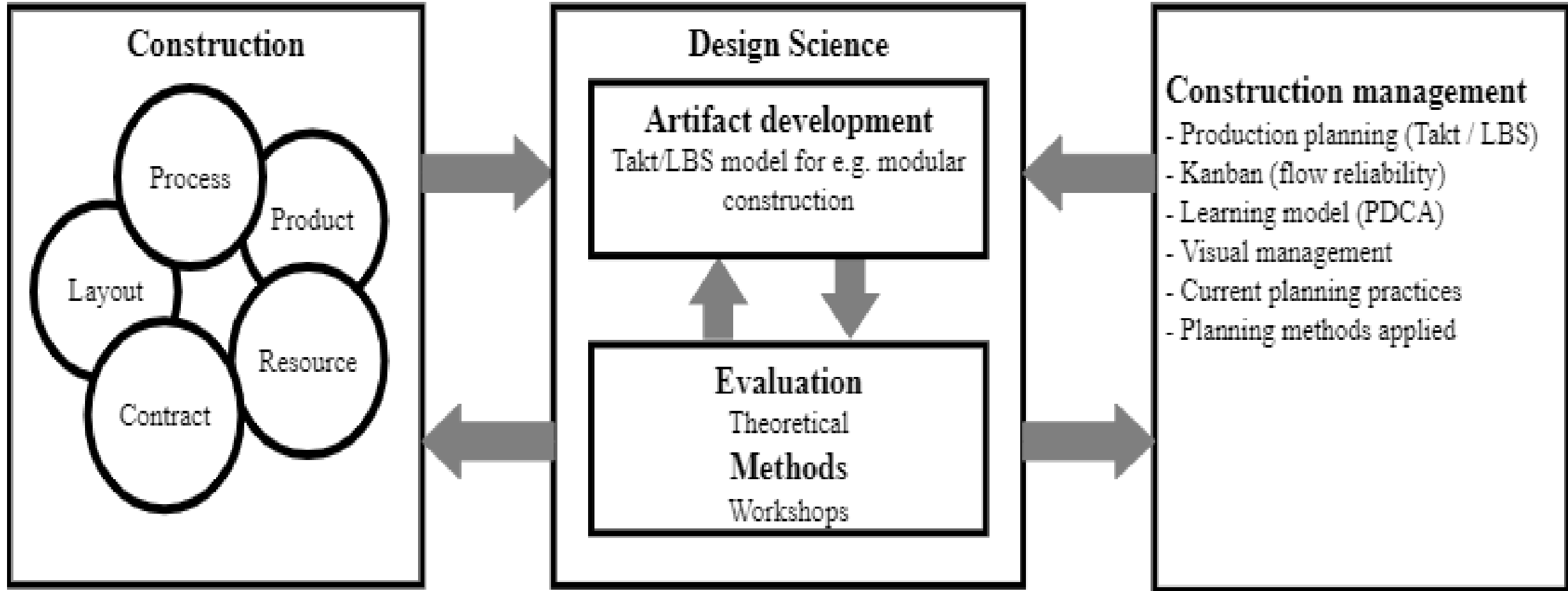


Figure 1.

Takt or Location Based Scheduling

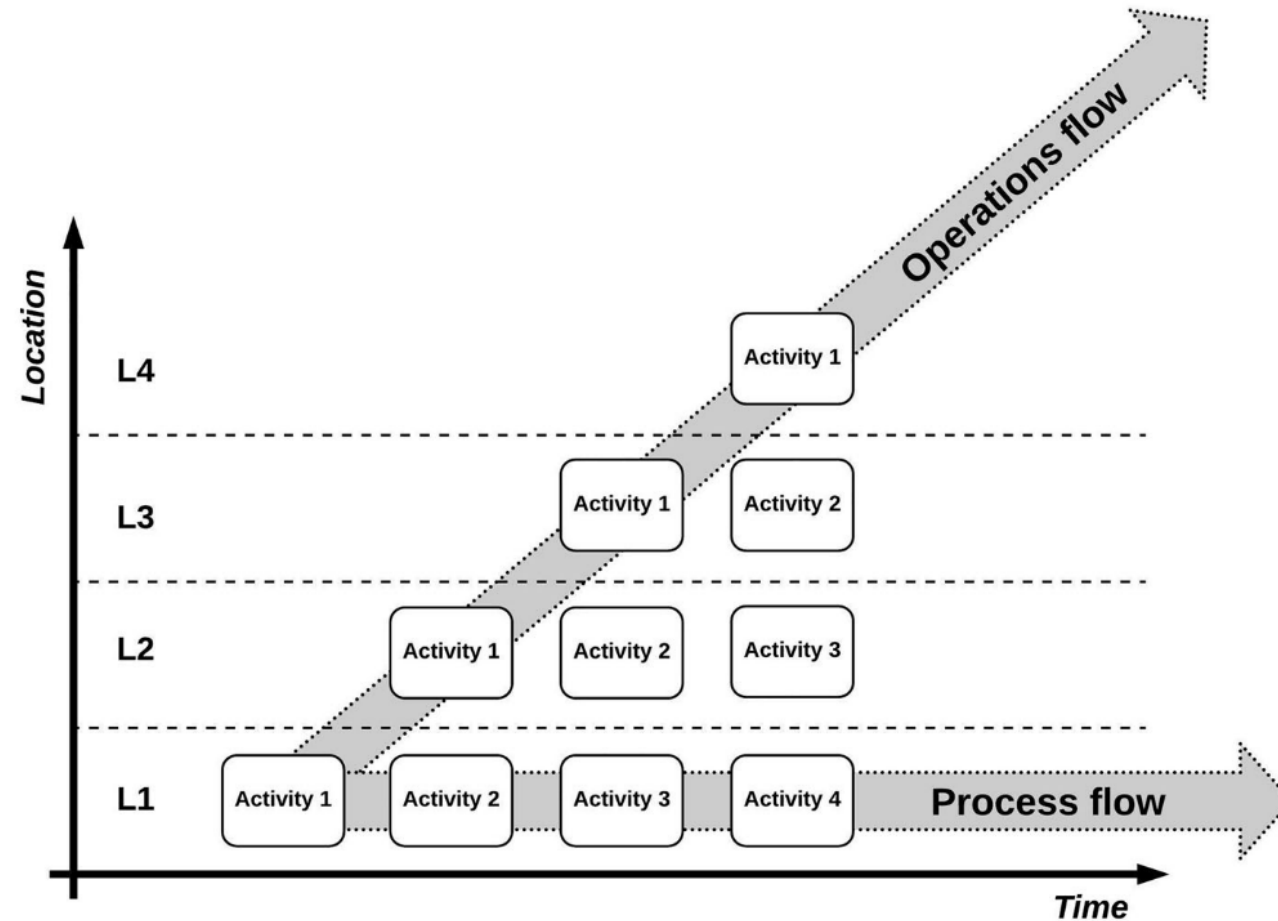
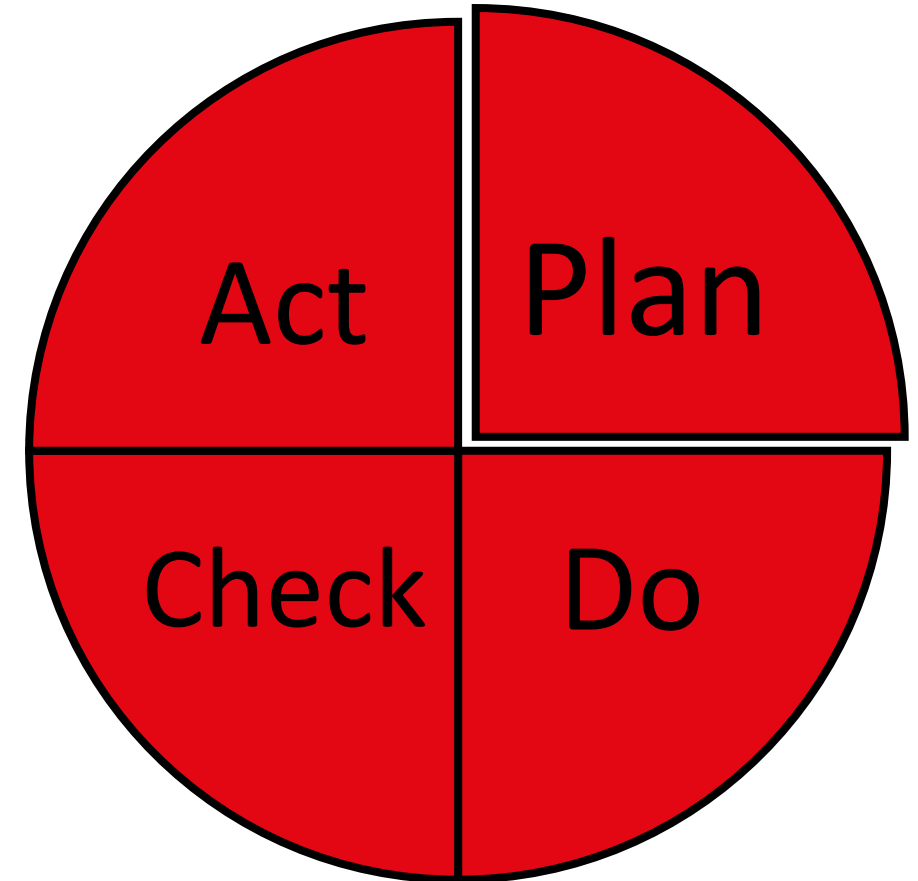


Figure 1. Relationship of process and operations flows in construction. Lehtovaara, J., et al. (2020).

Visual management


1. "Discipline," 2. "On-the-job training (OJT)," 3. "Job facilitation,"	Behavior
4. "Process transparency," 5. "Continuous improvement," 6. "Management-by-facts," 7. "Simplification."	Processes and plan
8. "Creating a shared ownership and the desired image," 9. "Unification and creating a boundaryless organization."	Organizational values

(Tezel, Koskela et al. 2016)



(Deming 2000)

Elements of artifact

Prepared 	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9	Task 10	
	WIP										
	Done										
	Resources	PLAN									

Assembly location / module overview

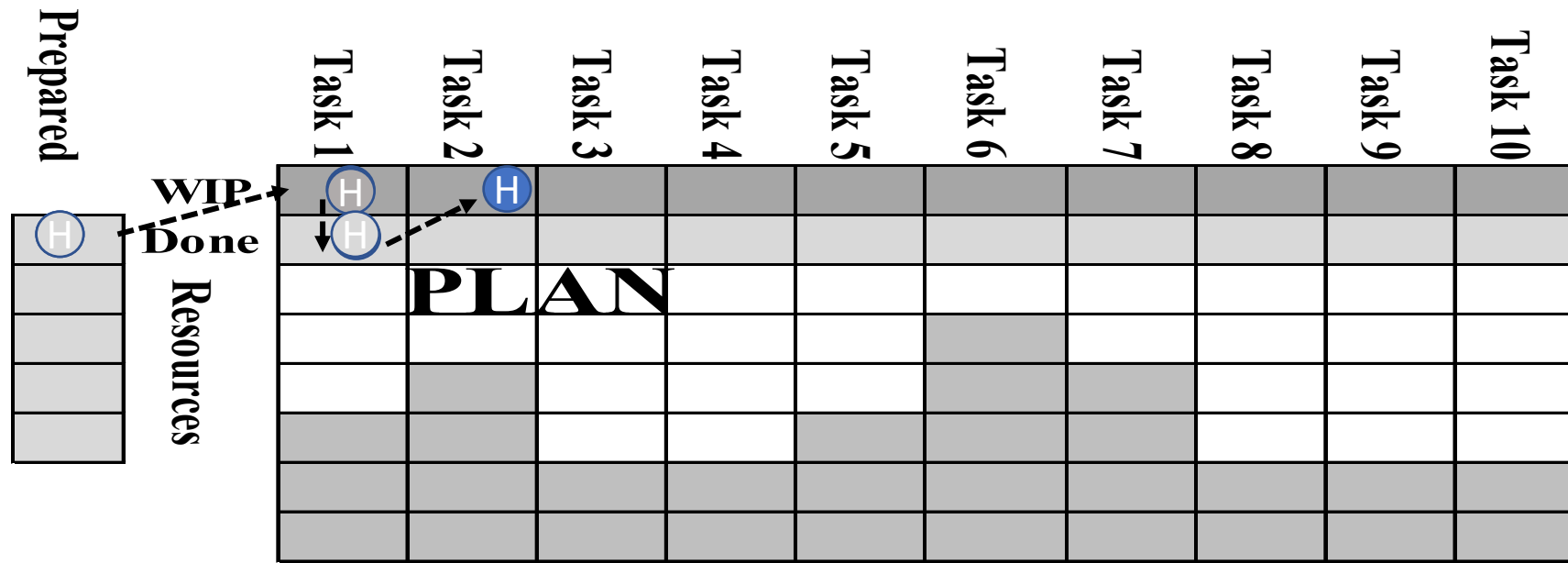
Top 3 safety issues

Top 3 quality issues

Deviation		Actions		Resp/ time
1		1		
2		2		
3	CHECK	3	ACT	
4		4		
5		5		

Figure 2

Elements of artifact



Assembly location / module overview

Top 3 safety issues

Top 3 quality issues

Deviation		Actions		Resp/ time
1		1		
2		2		
3	CHECK	3	ACT	
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Figure 2

Elements of artifact

Prepared	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9	Task 10	
	WIP					Ⓛ					
	Done	Ⓜ									
	Resources	PLAN									

Assertion view
/ mod A

Top 3 safety issues

Top 3 quality issues

Deviation	Actions	Resp/ time
1 Cable glands at location B missing	1 John doe is to purchase	
2 Task 3 tools not available	2 Foreman X is to provide	
3 CHECK	3 ACT	
4	4	
5	5	

Figure 2

Evaluation

1. Discipline	The magnet route encourages discipline among managers and workers, as it will be visual to all if the sequence is neglected or ignored.
2. On-the-job training	This has not been evaluated, but the simplicity and overview could be considered enabling factors. The resource cards allow individuals to be easily identified in case help etc., is needed.
3. Job facilitation	The artifact allows through its usage of magnets to display where teams are located, not only for managers or other workers but also for visitors with limited knowledge of the progress.
4. Process transparency	Tasks and locations are visible to all actors involved, bottlenecks and queuing
5. Continuous improvement	The PDCA continuously allows managers and workers to engage in knowledge sharing, assess deviations and actions directly related to the production. Enabling this.
6. Management-by-facts	Both 5 and 7 contribute to this function, as everything is available for the decision-makers, top 3 functions further support this.
7. Simplification	The direct link between the plan, process, resources, and location

Table 1

THANK YOU!

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