

# **SUPPLY CHAIN RHYTHM: MULTIDISCIPLINARY TEAMS THROUGH COLLABORATIVE WORK STRUCTURING**

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# Goal

The design of a collaborative production system

SCMaturity



## Research context

- **Part of a long-term expert programme on SCM**
- **All housing projects with the same team of organisations**
- **Awareness of basic lean principles, project-specific tools and driven to explore more opportunities for improving processes**
- **PhD research**

# Production System Design

- **Production System Design**

Strategic decisions on a project's viability, budget and lead time

- **Phase Scheduling**

Clear definition of phase activities and its lead times

- **Work Structuring**

Breaking down the work to be done in work chunks, hand-offs and production units, and the creation of flow

# Work Structuring Methods

- **Activity based tools**

Critical Path Method and PERT

- **Location based tools – location or zones instead of units produced**

Line of Balance, Flowline and Takt Planning

# “Takt”

- The regularity with which something gets done
- Value (product) + time + process
- A balanced work flow for trades
- Increasing productivity and shorten the overall lead time

## “Supply Chain Rhythm”

- **Beyond existing patterns of individual organisations or trades**
- **Collaboratively composed patterns**
- **A certain freedom within a regularity**  
Freedom to adapt work content, move work within packages and change tasks, within a set time frame
- **Inviting movement**

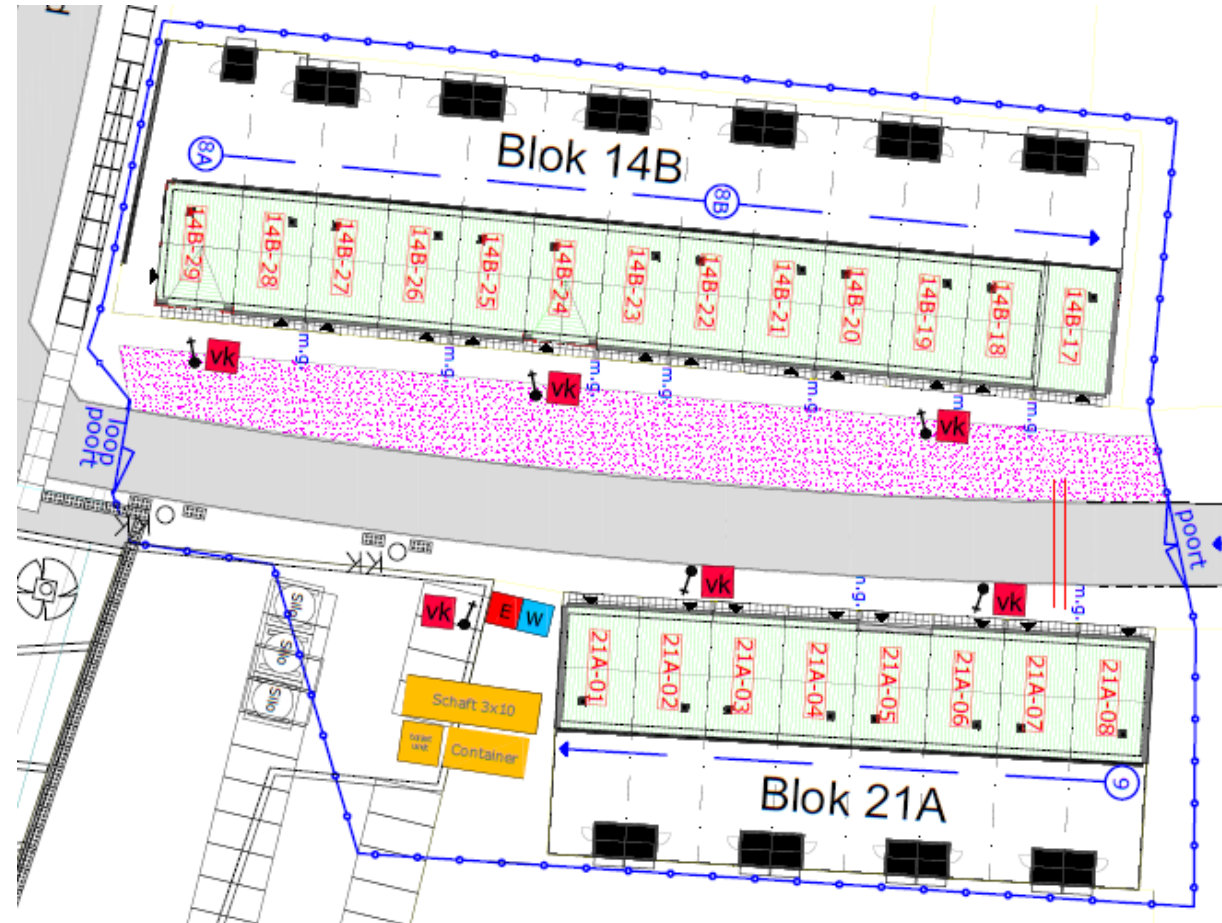
*“...all use the ability of rhythm to unite human individuals into a shared collective identity where group members put the interests of the group above their individual interests and safety...” (Jordania, 2011).*

# Elements of the approach

- Definition of speed of the production line / duration or rhythmic unit through measurements
- Definition of zones
- Template on work content
- Application of this template on a first project
- Adaption of logistics and involvement of all remaining site members
- Daily and weekly stands
- Interviews, direct observations and collection of recommendations for improvement



# Case

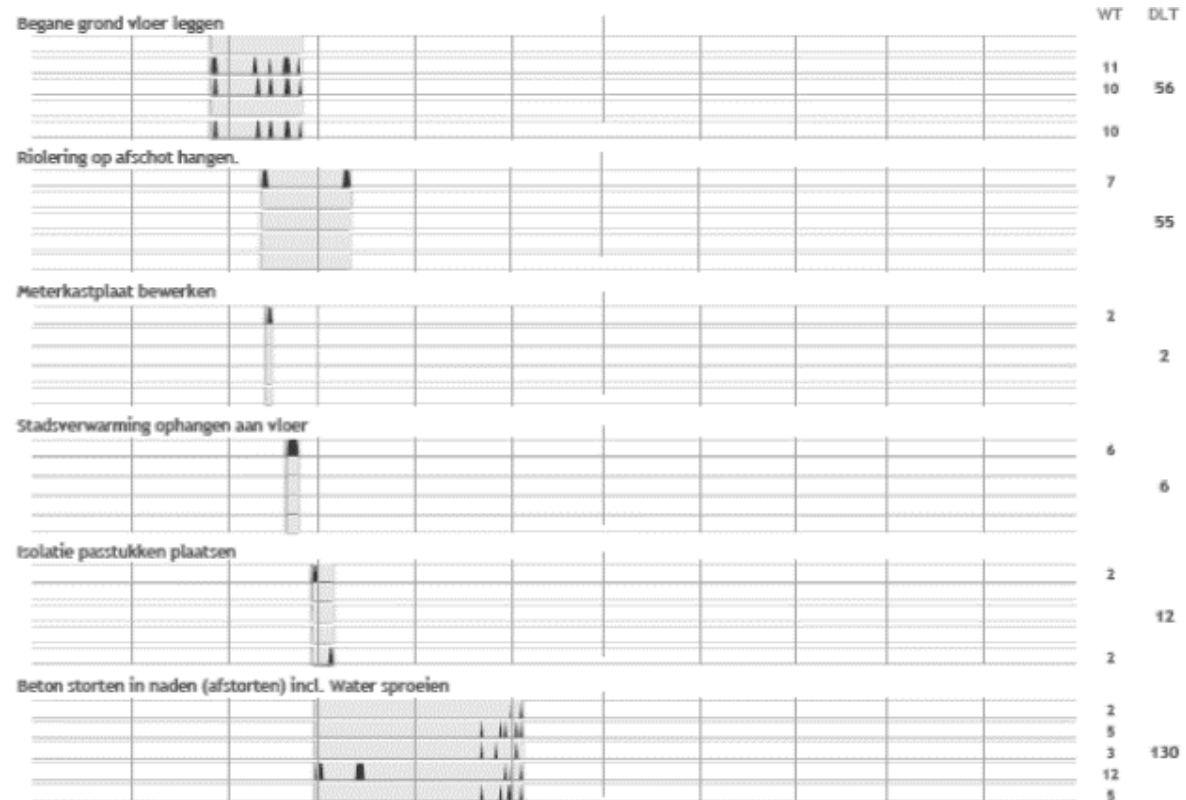


## Results (1): General advantages

- Lead time reduction of 12 days per house
- Less stock waiting
- Efficient use of the same crane
- Increased reliability



# Results (2)



## Results (3): Intervention-specific advantages

Table 1: Structure of teams

Organisation	# Members on-site (Usually)	# Members on-site (Case study)	Team
Organisation A	5	4 4	I
Organisation B	2	2 1	I
Organisation C	2	2 2	II
	2	1 1	II
Organisation D	2	2 2	III
Organisation X	2	2 1	III

- Collaboration: '+'

# Conclusions

- **Additional advantages**

Multidisciplinary teams have been created within a project

- **Further optimisation of the work flow**

The configuration of the crew performing the work chunk exceeds the boundaries of organisations or trades

- **“Parade of Teams”**



Thank you!