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IMPLEMENTING ELEMENTS OF LAST PLANNER® SYSTEM IN THE ORCHESTRA WHEEL METHOD

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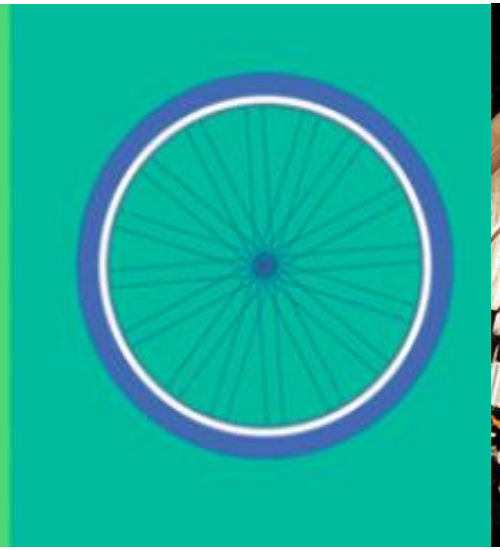
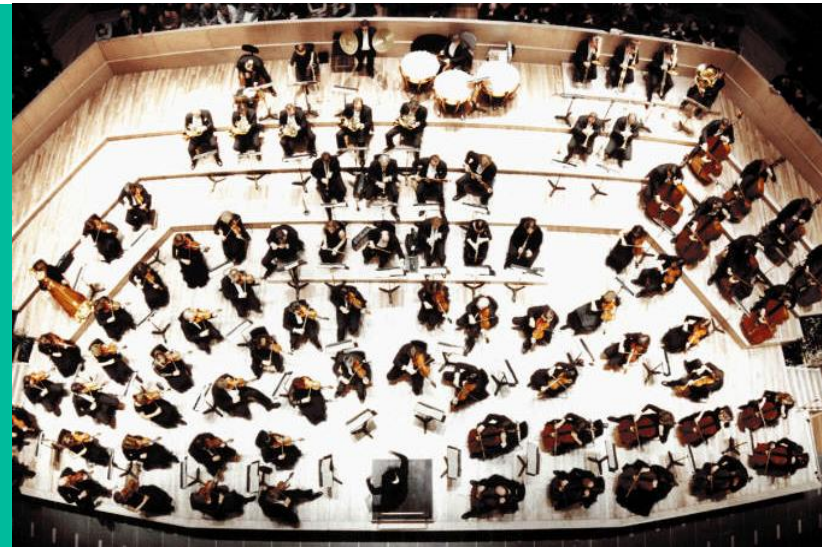
WHAT IS THE ORCHESTRA WHEEL METHOD?



ORCHESTRA WHEEL METHOD

Site planning method for the construction of high-rise buildings by saturating the Tower Crane to increase productivity

BACKGROUND AND CONTEXT

PRODUCTIVITY IN THE CONSTRUCTION INDUSTRY

The **construction industry** is among the **most relevant economic sectors worldwide** (McKinsey 2017).

However, as labor productivity **growth in construction has only been 1% in the last 20 years** (McKinsey 2017; The World Bank 2020).

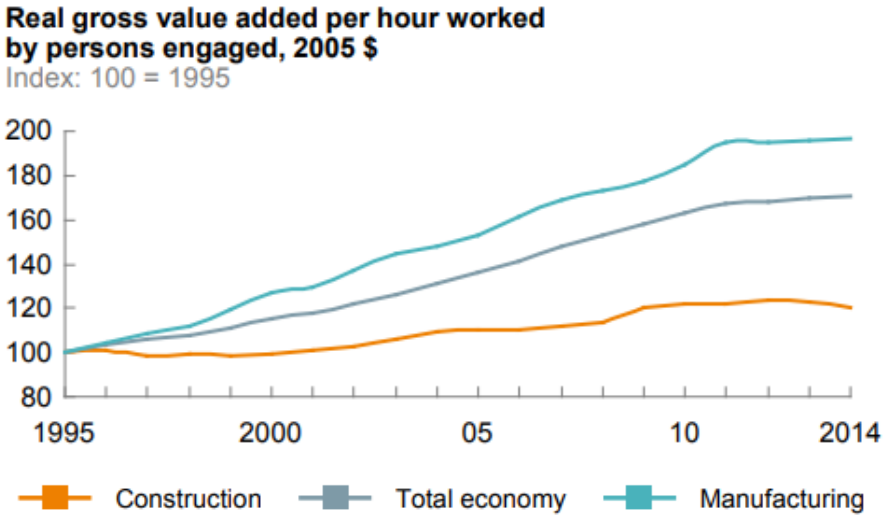


Figure 1. Globally, labor-productivity growth lags behind that of manufacturing and the total economy. (Source: McKinsey, 2017).

It provides **employment to 7% of the world´s population**, generating spending on goods and services that reaches **13% of the world's GDP** (McKinsey 2017).

Which has led to an **increase in costs** due to the large number **of activities that do not add value to the final product** (Salazar et al. 2020).

BACKGROUND AND CONTEXT

A planning method was created for the **Crane-Tower**, which **increases productivity**, through the **saturation** of the Tower Crane or Cranes.

80´s

ORCHESTRA WHEEL

90´s

LAST PLANNER SYSTEM

It is created to better integrate **Lean principles under construction**. It has been shown to **increase productivity in construction**.

2021

It is proposed to **integrate both planning systems**, since both are **based on people** and the **efficiency** of their elements.

ORCHESTRA WHEEL WITH LAST PLANNER SYSTEM

RESEARCH METHOD

DESING SCIENCE RESEARCH

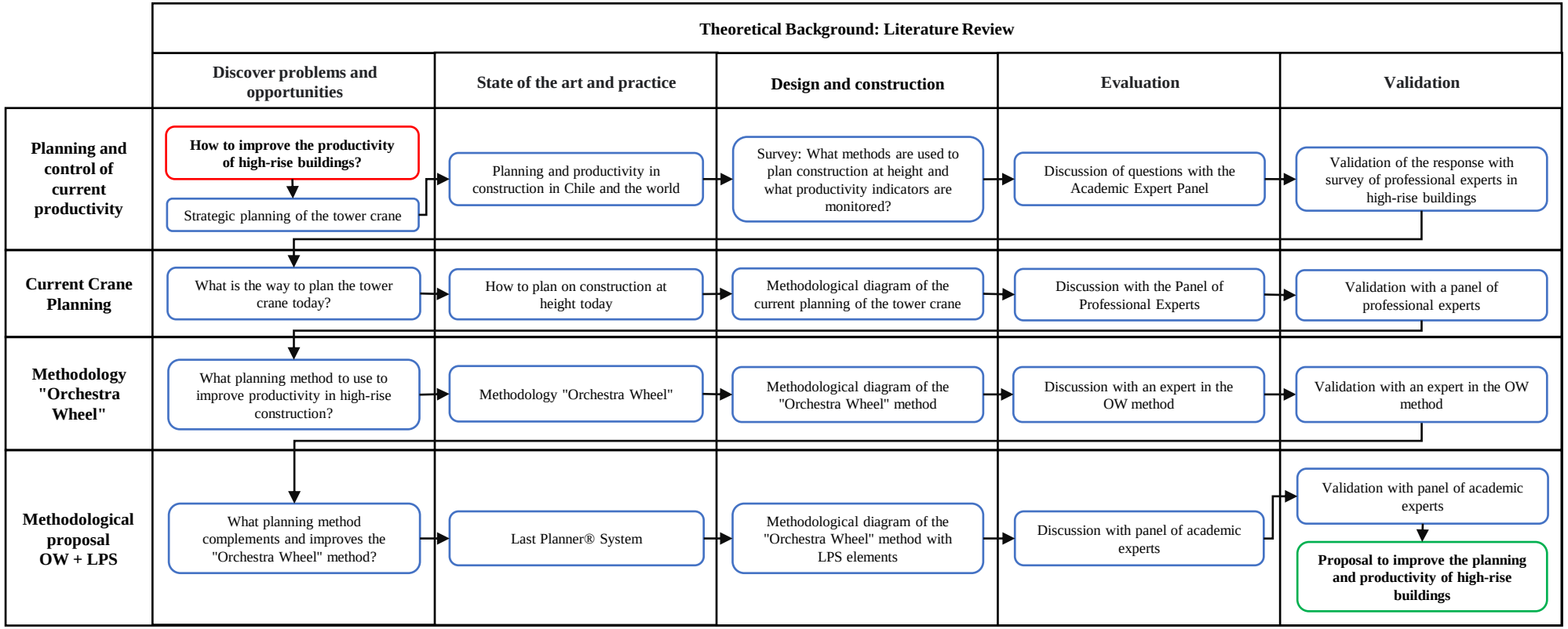


DIAGRAM OF CURRENT PROCESS OF USE OF CRANE TOWER

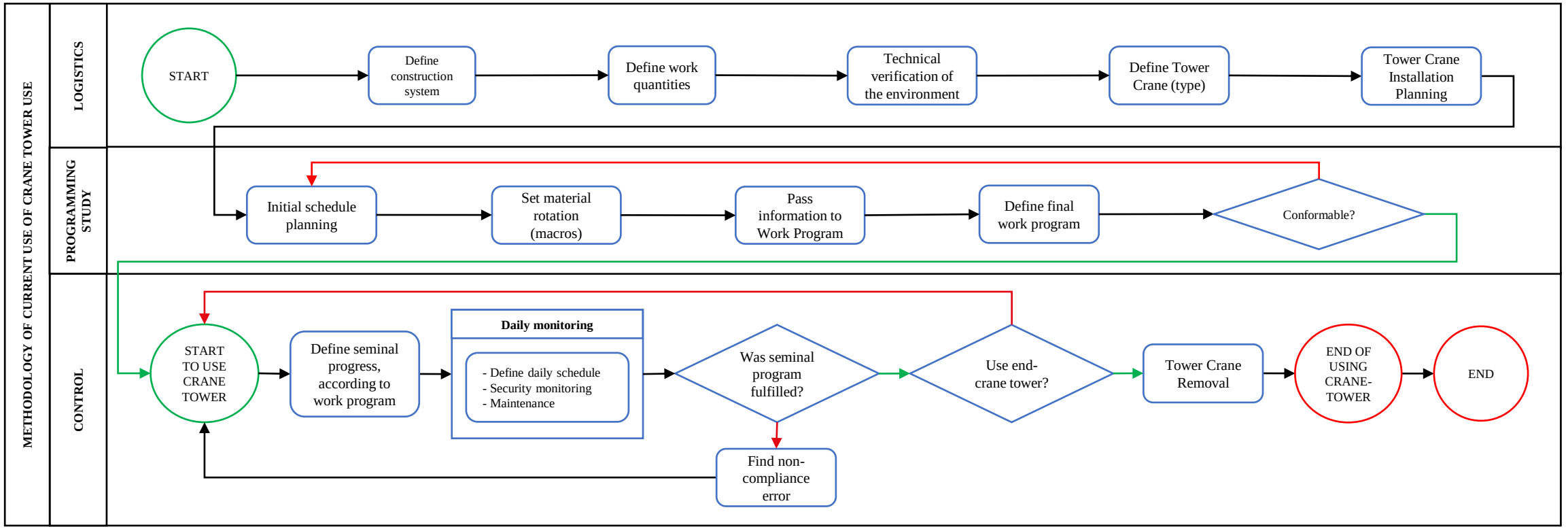
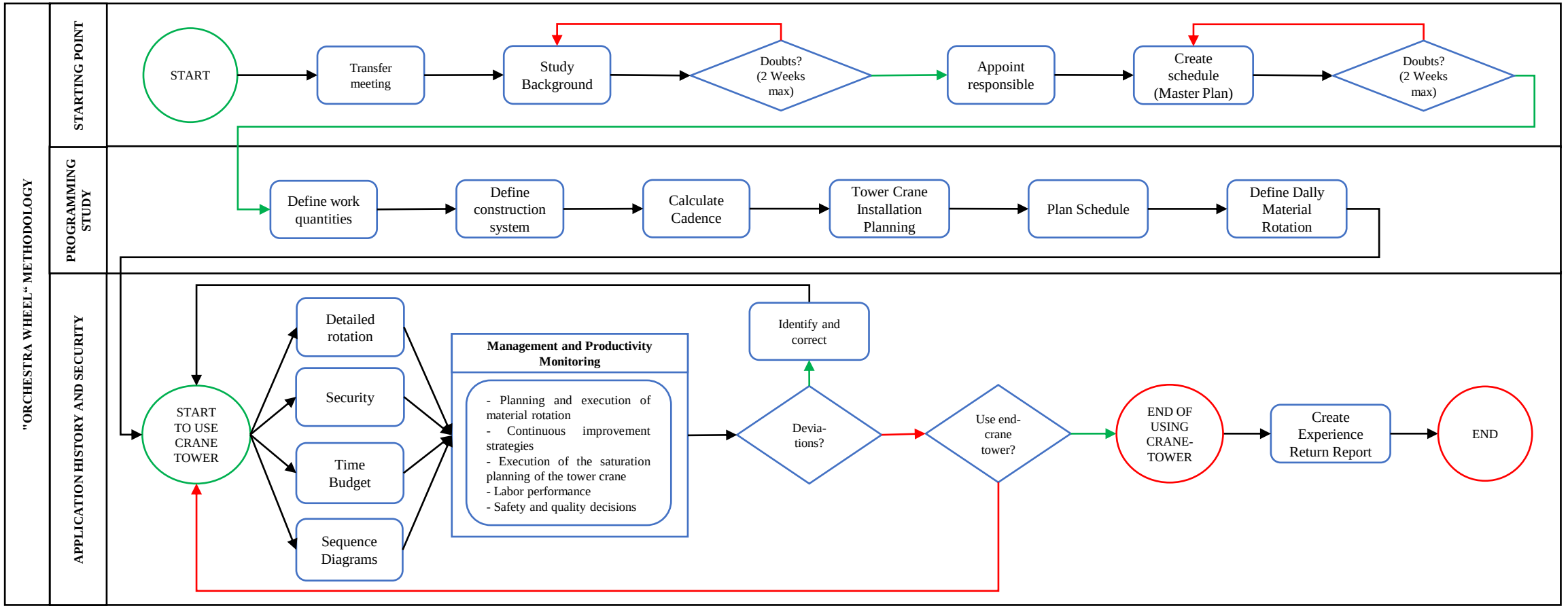
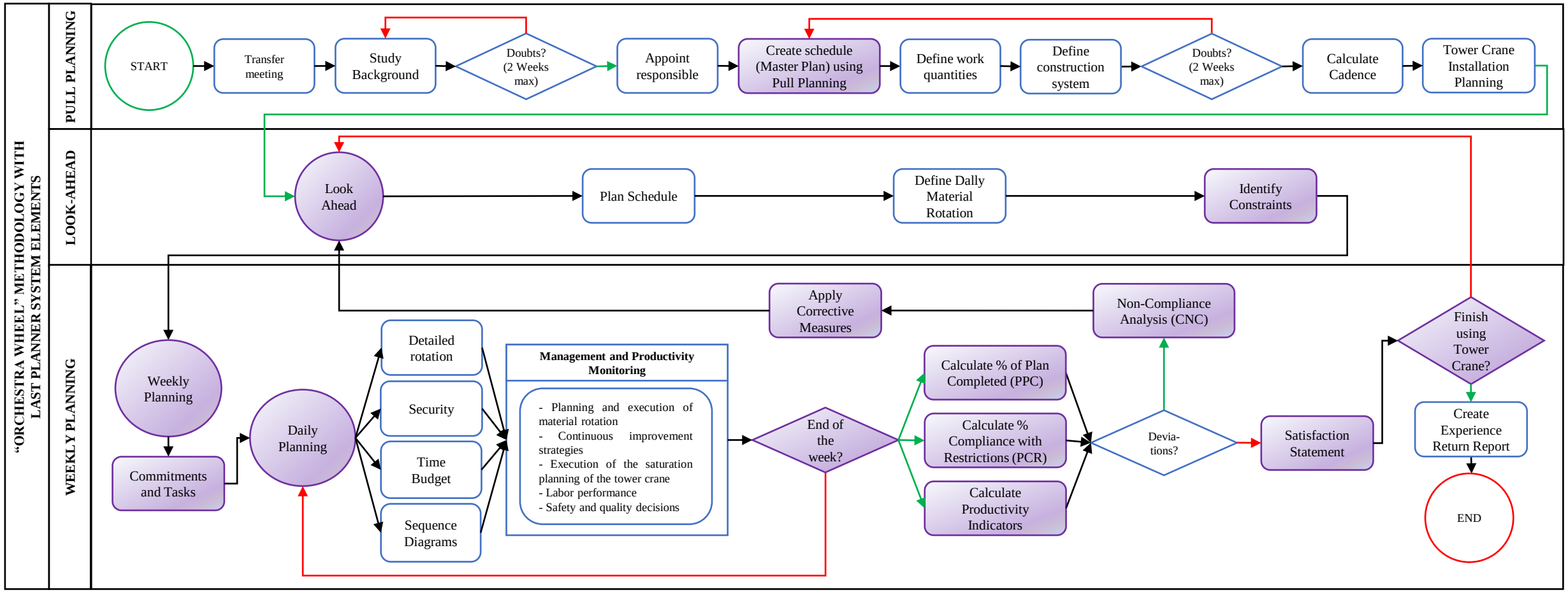


DIAGRAM OF THE "ORCHESTRA WHEEL" METHODOLOGY



PROPOSAL DIAGRAM METHODOLOGY OW AND LPS



CONCLUSIONS

The **main contribution** was creating the **methodological proposal** for the implementation of the elements **of LPS in the OW method** to improve the planning of projects in high-rise buildings that use Tower Cranes.

The **main limitation** of this research was that the system **could not be implemented in a case study**.

Furthermore, this methodological proposal **is limited to a single Tower Crane**. However, although the proposed diagram **could be adapted to two or more** Cranes- Tower, it is not shown in the present investigation.

Finally, **as future research**, we propose to implement this new methodology in **construction projects in high-rise buildings**.

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THANK YOU!