



**SIMULATION PROJECT FOR A NEW
DISTRIBUTION CENTRE OF PHILIPS**

PHILIPS

INDUSTRY

Logistics

APPLICATION AREA

Warehousing

COUNTRY

The Netherlands

CHALLENGE

- Validate the already performed calculations on the required number of reach trucks and order pick trucks.
- Identify possible bottlenecks situations.

SOLUTION

A validated simulation model which includes all processes.

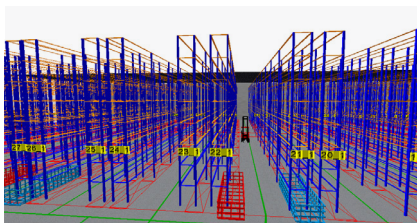
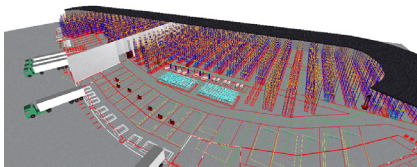
KEY TO SUCCESS

The results of this model gave Philips Lighting more insight in the expected performance of the new warehouse.

Philips Lighting used the 3D representation of the warehouse as reference material and for educational purposes

PHILIPS LIGHTING

Philips Lighting has built a new distribution centre at their site in Acht (Eindhoven). Although calculations on processes had already been made, the management decided to simulate the new warehouse in order to validate the already performed calculations and identify possible bottlenecks in the process. ED Logistics contains standard building blocks, which enable the user to build a warehouse in 2D and 3D environment. This suite is used to build a simulation model of the new warehouse. The model has been built in close cooperation between Philips Lighting Distribution and INCONTROL Simulation Solutions.



OBJECTIVE

The goal of this simulation project was in the first place to validate the already performed calculations on the required number of reach trucks and order pick trucks. In the second place what-if scenarios were defined to identify possible bottlenecks situations. Furthermore Philips Lighting wanted to have a 3D representation of the warehouse to use as reference material and educational purposes. The model includes the warehouse processes from receiving to put away and from order picking until shipping. Input for the model was defined based on an analysis of historical order patterns. Truck specifications came from the supplier of warehouse equipment and lead times were used for warehouse processes.

One of the questions to answer was to define the required number of reach trucks and order pick trucks in order to handle the flow of inbound and outbound goods. Other questions concerned the capacity of the drop zones, the buffer conveyors between sealing area and shipping lanes and the capacity of shipping and receiving lanes.

BENEFITS FOR PHILIPS LIGHTING

The project's result was a validated simulation model which includes all the described processes. The results of this model gave Philips Lighting more insight in the expected performance of the new warehouse. In short the benefits for Philips Lighting from this simulation project are:

- A validated range of the number of trucks required to handle the inbound and outbound goods flow.
- Indication of congestion in some parts of the warehouse. One of the advices was to spread the concerned product type over more aisles.
- The model showed a bottleneck at the confirmation and sealing area. The advice was to rearrange this area and balance the division in terminals for full pallets and cluster pallets.
- A useful 3D representation of the warehouse.
- Indication that the number of shipping and receiving lanes is stressed, good planning of inbound and outbound flow is required.
- Reduction of 'waiting for replenishment' would improve the performance.
- The simulation model of the warehouse in Acht gives a good starting point to simulate a similar warehouse in Pila (Poland).

