Subsystem requirements

* Generate supply network design
* Create optimal layout and flow
* Create optimal floor plan layout
* Calculate total carpet area
* Predict and manage human resources
* There should be offices in the manufacturing area such that walking distances are decreased

The facility design guidelines will differ from the current production portfolio and the new crane parts that have to be manufactured. This is due to the large difference in size and weight. All current products can be lifted by hand manually onto pallets, whereas a lifting solution is needed for the crane components. Therefore there is a difference in the basic design guidelines, and this will also result in different layouts.

**Guidelines:**

Current production system

* The maximum transportation batch size fits on an area equivalent to a Euro Pallet.
* Walkways should be 1.5 meters wide at minimum.
* Transportation ways within cells should be 1.5 meters wide.
* Transportation ways between cells used by electric pallet jacks should be 2 meters wide.
* Every machine inside a cell should have space for 2 pallets, one for current production and an extra for a new batch.
* At the end of the cell there should be 3 pallet places, accounting for a delay in the full transportation of completed batches.
* Finished products of a cell should be easily collectible by electric pallet jacks for pre-assembly storage.

New production system:

* The crane elements should be transported via an overhead crane.
* Feeding of the construction elements through processing steps is done via conveyer belt.
* The production line layout should go directly from raw material storage to finished product storage without space for WIP storage in between.

General guidelines:

* Worker space in front of a machine should be at least 2 m^2
* Space around machines for walking around and considering easy access for maintenance should be at least 1.2 meters.