STOREGANIZER
MORE STORAGE IN LESS SPACE

HOW TO DESIGN YOUR WAREHOUSE IN 7 STEPS

The ultimate guide to the ideal layout

INTRODUCTION

How to plan the perfect warehouse design? It seems like a quite simple thing, but in practice it is much more complicated. Make sure you have an excellent preparation as it ensures the best results. Read Storeganizer' s warehouse design tips and create the ideal layout.

1. Understand your business
2. Choose the right location
3. Visualize the design
4. Make a simulation
5. Keep it simple
6. Make use of a warehouse management system (WMS)
7. Optimize your storage capacity from the start

1. UNDERSTAND YOUR BUSINESS

It all starts with your business and its needs. Before you start designing a plan you need to ensure all data have been gathered and interpreted. In other words: understand your business.
What business needs are you fulfilling? How can you make current operations more efficient? What about future needs? These data include various components.

- Volume of receipts
- Stock turns
- Returns
- Order volumes
- …

You need a clear and detailed view of these data in order to determine the overall size of the future warehouse, the number of loading docks, storage capacity and staging. Think about those needs short and long term.

To make the right choices you need to analyze your product types. Dimensions, weight, demand levels, receiving picking unit, … It's actually all about storage as it determines the location type. The storage method will actually have an impact on a lot of things: forklift model, pick and number efficiency of required replenishments, capacity and pick rate, … Mapping your needs with a computer simulation will be a great help.

In addition your business must be prepared at peaks like daily, weekly, monthly or seasonal bustle. If you know the peak requirements it's easy to determine the size of the pick faces, shift patterns, capacity and the number of dock doors. All components have to be described accurately in order to make the right decisions for your future warehouse.

2. CHOOSE THE RIGHT LOCATION

Finding the right location is important for a warehouse. Especially if it will be part of a storage and distribution network. Maybe you better consider extending an existing warehouse instead of building a new one. But if you do, make sure the new warehouse is located at the right spot.

To find the best location for your new warehouse, think about the total capacity available in the network. Why? The cost of transportation, which is charged to the customer, will be affected by it. And as a company you want to give your customers the best service at the lowest price. As a result of that a bad location could make the difference between a moderate or high revenue. Especially in times where customers tend to order online.

Accessibility to roads and highways and local density must be considered. Mainly if the transportation takes place by road. Focus on these points:

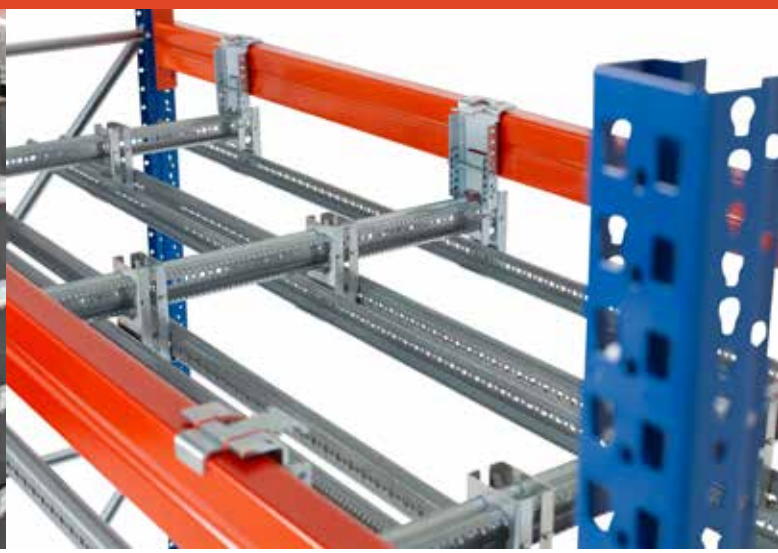
- Average traffic speed
- Traffic volume
- Peak hours
- Road safety and conditions
- …

To run a warehouse you also need gatehouses for deliveries and collections. Therefore you better ensure the yard supports the warehouse to avoid congestion outside. A large parking area is one the main requirements. So make sure you understand the capacity of the yard as you don't want bottlenecks to have an impact on warehouse productivity.

Proximity to producers, suppliers and customers is also important. Off course you want to keep the supply chain as efficient as possible by selecting the warehouse location strategically. Even weather conditions (f.e. risk of exposure to natural disasters) could play a role in your choice.

Consider your warehouse's proximity to carriers as they will streamline the process of shipping. But also close proximity to your customers will matter. The key is to find a good balance between those two parties to realize a cost-effective process.

3. VISUALIZE THE DESIGN



For the design itself models need to be constructed to obtain a clear view of your warehouse. In order to do that, make sure you use the right tools.

More experienced designers could create the optimal warehouse lay-out with a general CAD-tool. But these days a lot of specialized software is available to design for different purposes. Our advice? Use a tool that is easy to use for logistics professionals so you can try different scenarios. Both the beginning and experienced user should be able to create a 2D-plan.

A warehouse design tool is off course specially designed for warehousing as it contains libraries of rack and equipment types, a CAD-import function and the ability to run different operating procedures. In this way you can anticipate to potential expensive errors.

After a 2D-model has been created and approved it's time to bring the model to life with a 3D-model. It allows the designer to refine the plan even further and to create a virtual tour through the new warehouse. An excellent way to get feedback and stimulate discussion from all stakeholders.

Designing a warehouse lay-out is a crucial process and has a lot of advantages. First of all it has an impact on the efficiency and productivity of your warehouse. A professional layout can provide easy access to stored goods, improve order rates and shorten travel time.

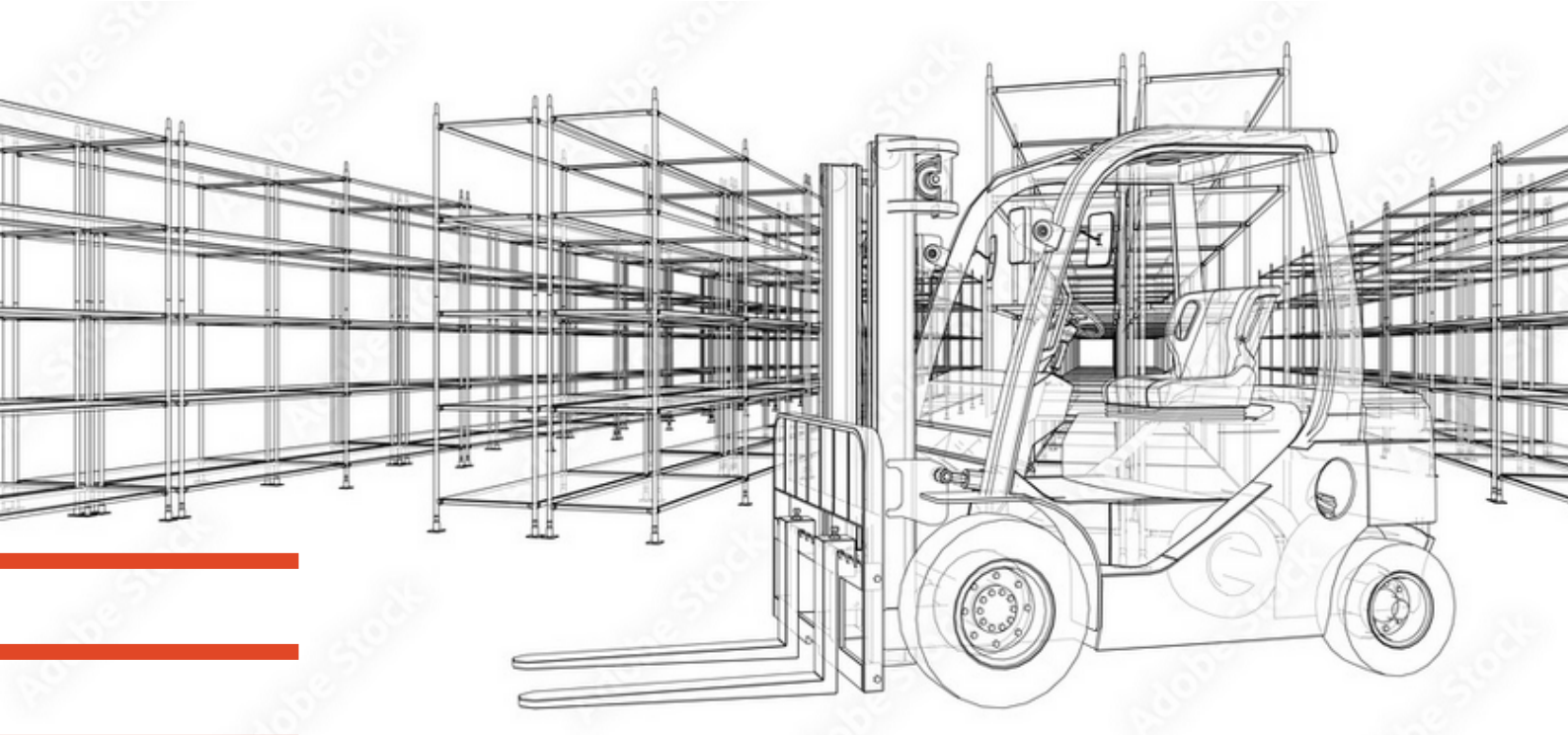
4. MAKE A SIMULATION

Designing a warehouse is a hard job as you have to anticipate to future bottlenecks. A 2D and 3D-design and some spread sheets will deliver a clear view of the challenges. But if you want to get the whole picture including all resources you also need a (time-based) simulation. It helps you to predict the interaction of the different elements.

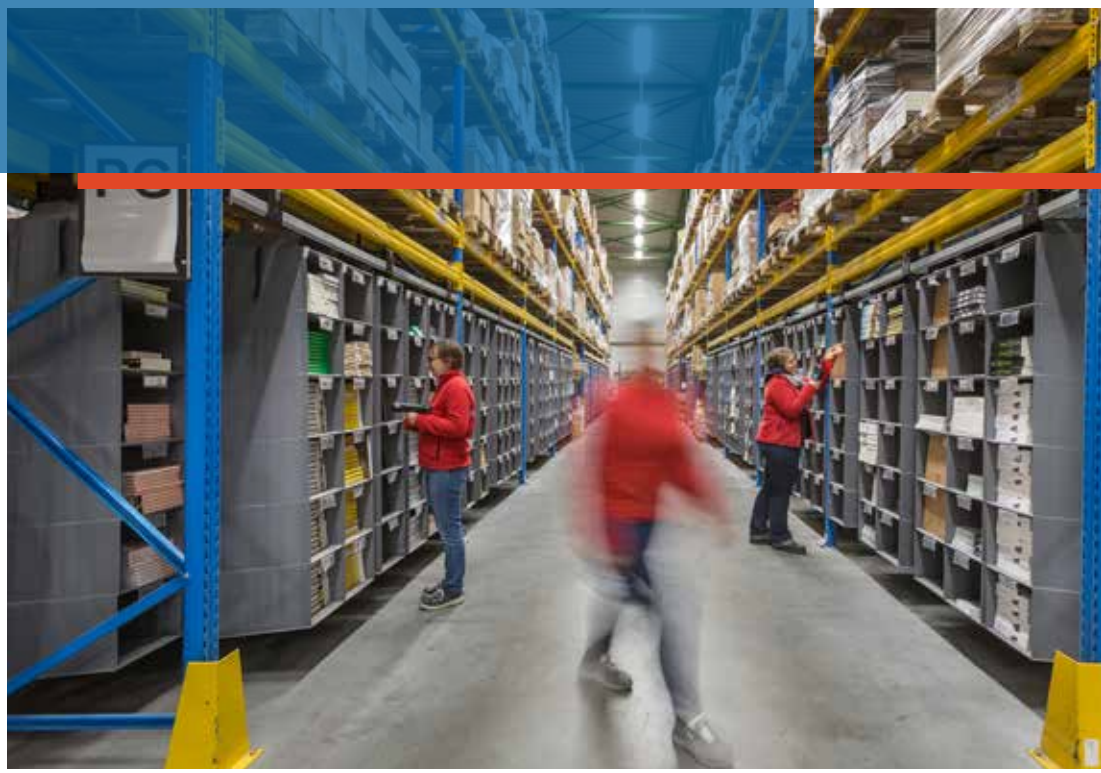
- Storage
- Access
- People
- Equipment
- Order profiles
- Deliveries

The inter-relationships of these factors can't be optimized on a spreadsheet or CAD-package. You need a simulation application to find a good balance between budget, space and business requirements. In order to estimate the effect of activity peaks to your operation you also need a time-based simulation. How do interactions between different areas that share the same resources affect the business? This simulation will deliver you the answer.

Warehouse simulation uses a computer model to understand the warehousing system. In that way you are able to analyze and experiment in a virtual setting. Make use of today's technology and get it right from the start. There's no excuse anymore to make expensive mistakes.



5. KEEP IT SIMPLE



Flexibility is important for almost every business, but especially for a warehouse. Why? Because customers' satisfaction depends on it. As demand profiles change constantly, you have to ensure quick accurate shipments. Always. Therefore don't exaggerate with automation when designing you future warehouse. In other words: keep it simple.

Complex material flows supported by mechanical handling equipment seems seductive, but it may also mortgage flexibility. As a warehouse you better guard your opportunities to re-scope it in the future. Automation looks impressive but it has to be redundant and flexible to the order profile. After all you still want to respond to seasonal or customer demand.

Ensure a simple flow. An uninterrupted flow of goods, personnel and equipment is vital for a good functioning warehouse. The designer has to take this into account. Eliminate inefficient routes to provide a sequence for each operation.

We people often seems to be attracted to complex structures, processes and technology. When you buy technology, you must also look at the cost of maintenance, new competence and lack of flexibility. So the key is to evaluate. Maybe there's an easier way with a higher return on investment. The most intelligent solution in practice is often about simplicity. There's a big chance it is also the most cost-effective, more reliable or simply best solution.

6. MAKE USE OF A WAREHOUSE MANAGEMENT SYSTEM

Today you need a warehouse management system (WMS) that offers visibility in your inventory, ensures supply fulfillment and guarantees optimal space utilization. Actually there are a lot more advantages. That's why a WMS is a must have in today's modern warehouses. But a WMS depends on the structure of the building, so it has to be built into the simulation model to support the design.

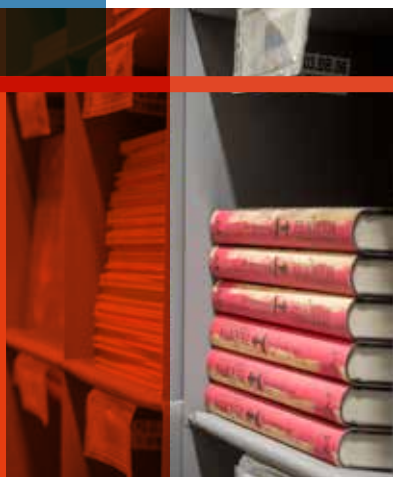
Most modern warehouses use a WMS to drive throughput, but it can only operate within the restrictions of the warehouse facility. Therefore it's important the warehouse has been designed in the right way and the designer has taken into account the use of RF devices and the installation of a radio network. It even has an effect on task driven strategies like voice-directed work (picking, replenishment, putaway, cross-docking, …)

Fulfillment operations need to apply to new customer buying patterns. That's why every warehouse should make use of a modern (preferably cloud-based) warehouse management system. The benefits of it? More operational efficiency, a lower total cost of ownership and improved customer service.

Tech tools are changing the landscape and will integrate even further into warehouse design in the future. The challenge is connecting them with the entire supply chain ecosystem. Be ready for them and make sure they support the design.

7. OPTIMIZE YOUR STORAGE CAPACITY FROM THE START





In order to create the ultimate warehouse design it is important to obtain an accurate view of the available space. Read again point 1. It's all about storage as it determines a lot of things: location, forklift model, pick and number efficiency, capacity, pick rate, … And off course you want to make optimal use of the potential space.
Are you seeking for a solution to optimize the efficiency of your logistics space in your region? Discover how modular, vertical columns of durable Storeganizer pockets increase space utilization at a lower cost per square meter.

Make an appointment and contact us at www.storeganizer.com or via info@storeganizer.com

About Storeganizer

Optimising the cost per square metre and organising order picking as effently as possible are ongoing challenges in warehouse management. Pallet racking works well for high-volume, fast-moving items, but may lead to a big waste of space when it comes to smaller, slower moving inventory items.

This is where Storeganizer comes in. This innovative, high density storage system provides a slim fit storage solution that is ideal for small, slow moving items. Measuring and installing a Storeganizer solution at your facility can be done at a short notice, including on-site customisation. Get in touch!