



# Optimising Your Warehouse

When Relocation  
Is Not an Option



Planning for the new changing world is a challenge for many warehouse managers when the dynamic of storing inventory is rising. Optimising the existing warehouse space can be an unmoveable parameter you must work with. According to Peter Evans, National Director of Industrial Advisory, Occupier Services says, “vacancy rates for industrial assets have plunged to a record low of 0.6 per cent nationally”.

Businesses are experiencing the rise of e-commerce and higher demand for products to fulfil customer demands. This creates extraordinary challenges for warehouse managers and generates valuable business opportunities. The challenge in 2023 and beyond for warehouse managers will be how to optimise their existing industrial space strategically.

Strategically optimising the existing warehouse space encompasses design, operational costs, logistics, developing performance and productivity and environmental considerations to maximise returns and have the optimal solution within their warehouse. It is no easy task, but that is where many warehouse managers are starting in 2023.

The first step is to review your current space utilisation and know exactly how your warehouse space is used. The following four metrics will get guide you through the process.



## Step 1 Calculate Your Total Warehouse Size

- Start with the total square meterage of your overall warehouse facility.
- Subtract office areas, restrooms and any other space that is not used for storage.
- Multiply the remaining square meterage by the warehouse's clear roof height. The roof height is the distance from the floor to any overhead object, such as beams and other structural fixtures.

The sum is the cubic metres of your total warehouse size.

### Total Warehouse Size

2300 Square metres x 9 metres = 20,700 cubic metres

## Step 2 Calculate Your Storage Area Usage

- Multiply the width and height of the outside dimensions of your racking systems, then multiply that number by the height of the highest load in that area.
- Keep in mind that the height of the highest load may not be uniform throughout the warehouse. For example, if you have one area with a 6 metre load height and another with an 8 metre load height, calculate them separately, then add the numbers together.

You now have the cubic volume size number of your storage area. This number is the potential or maximum storage space based on your warehouse's current setup.

### Potential Storage Area Size

(6 metres high x 560 square metres) + (8 metres high x 280 square metres) = 2600 cubic metres



## Step 3 Analyse Your Potential Storage Area

- To identify the potential storage area, divide your potential storage area size by the total warehouse size number, then multiply by 100 to get the percentage of space. What percentage do you have for the potential storage area?
- The percentage number represents the amount of your warehouse that could potentially be used for storage in your current setup. Ideally, you should have a number between 22-27 per cent which means your employees have enough space for efficiently picking, loading and unloading without wasting available space. However, if your percentage is lower than 22 per cent, the space could be improved by optimising your rack locations and aisle widths. In addition, redesigning the facility will be important to resolve your storage limitations.

### How Much Warehouse Space is Potential Storage?

2600 cubic metres - 20,700 cubic metres = 12%

## Step 4 Calculating Your Space Utilisation

- To work out space utilisation, add the volume of all products stored in your warehouse. If you operate a warehouse management system (WMS), this number will be readily available to you on the system.
- Simply divide the total volume of all products by the storage area size, then multiply by 100, and you will have the percentage of space utilisation.

### Space Utilization with WMS

1540 volume of products – 2600 storage area size x 100 = 59.23%

- If you don't use a WMS system, you will need to work the number out manually. You can divide your storage areas into sections (like rows of racking). Estimate the per cent utilisation of each row. Then add the results and divide by the number of rows or sections to work out the percentage.

### Space Utilization with WMS

75% section 1 + 65% section 2 – 2 = 70%

Identifying the existing warehouse space utilisation is different for each independent business. It relies on your specific warehouse, the current storage system and your inventory description, such as the number of SKUs, their size and the volume you carry.

Once you have determined your warehouse space utilisation, you can use this number to evaluate your warehouse for possible improvements and changes. For example, you likely have identified potential additional space that can be utilised.

## Optimising the warehouse

For some companies, small gains may be made within the existing infrastructure, whilst years of poor design may be holding the business back for others. Many racking systems were installed on the principle of just adding selective racking in rows within a space.

Although serviceable, it is far removed from efficiencies and optimising storage space. It can be as simple as changing the direction of the flow of the pallet racking through to using a combination of different types of pallet racking to increase the storage density of some or all your products.



# Choosing the Right Storage System to Increase Storage Volume and Density

A higher number of facilities use selective pallet racking than any other type available, and it may not be the ideal storage system for your warehouse. If you are looking for more storage volume and density, using a professional warehouse storage design consultant provides you with all the options available. Through 3D modelling by the designers, you can view exactly how the warehouse will operate and consider any necessary adjustments before the installation.

A design consultant can guide you through what will work best for you, and you must be prepared to brief the consultant. In preparation for your meeting, you need to prepare to answer questions such as:

- Do you need to increase the storage volume, and by how much?
- What changes are anticipated in SKU profiles?
- Do you need high storage density?
- Is selective picking an ongoing part of your inventory management?
- Does the storage solution need to accommodate a last-in/first-out (LIFO) inventory or first-in/first-out (FIFO) management system?
- Is your inventory made up of a high number of SKUs, or is it a volume storage business?

Working with your design consultant, you can identify a storage solution within your existing facility that supports the business's current and future growth requirements.

These are some options available for you in pallet racking and storage.

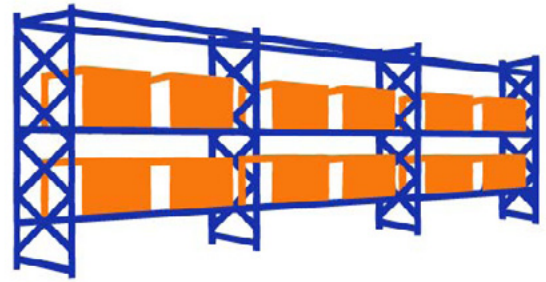


# Selective Pallet Racking

---

Selective racking is the most popular type of pallet racking used in warehouses as it works with any forklift, so no specialised lift trucks are required. The two types of selective racking are (1) one-pallet deep and (2) double-deep racking.

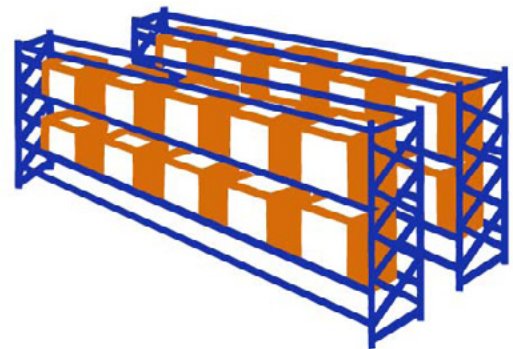
Selective racking can store just one pallet deep.



# Double-Deep Racking

---

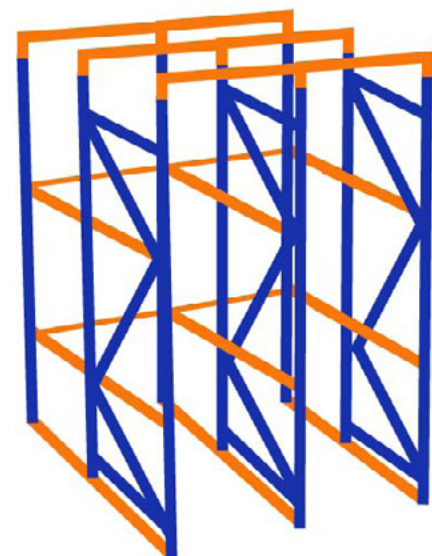
Double-deep racking systems have many similarities to selective racking, but instead of operating one row, the racking is placed two rows deep.



# Drive-in or Drive-Through Racking

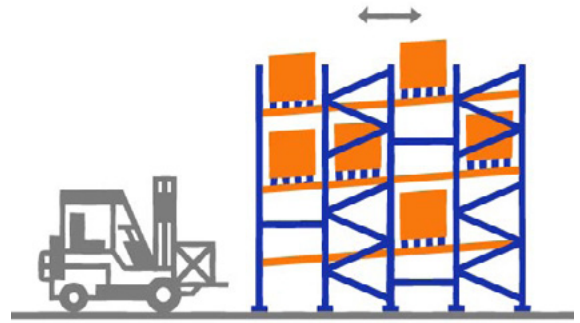
---

Drive-in or drive-through racking operates with pallets stored on rails instead of shelving. The rails extend the length of the rack, allowing forklifts to drive into the racking laneways for pallet placement and removal.



# Push-Back Spring Rail Racking

Push-back spring rail racking is a series of pallets that glide on rails. When pallets are loaded, the springs stretch to allow the pallet to be loaded in front. As most pallets are loaded, the spring stretches to cover the full length of the track. During unloading, the driver removes the front pallet, and springs automatically push forward all pallets leaving the next pallet ready for access.



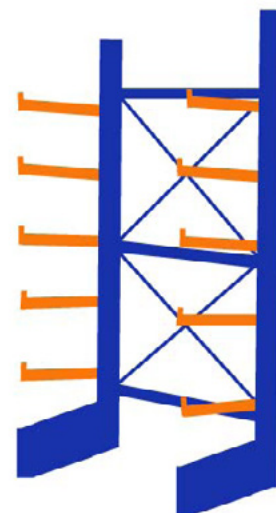
# Pallet Flow Racking

The pallet flow racking system allows up to 20 pallets to flow or roll down an incline to the front of the racking on a series of rollers or wheels. The pallets are loaded at one end of the system and unloaded at the other end. This maximises the use of floor space with limited aisle requirements. It also makes it optimal for First-In, First-Out (FIFO) inventory management.



# Cantilever Racking

Cantilever racking consists of protruding arms designed to hold lengthy or unusual shaped materials, like pipes and wood. The racking is designed to have no front-loading access obstructed with solid vertical uprights making it well suited for awkward or oversized materials.



You can also consider options of narrow aisle racking, and pallet live racking.

**With all types of racking, there are trade-offs for what each can deliver as part of your storage system. Your consultant can guide you on the best choices for your warehouse.**



**Melbourne Head Office**

11 Dalmore Drive, Scoresby VIC 3179

**Sydney Office**

Level 6, 10 Herb Elliott Avenue, Sydney Olympic Park, NSW 2127

**Brisbane Office**

4 Trade Street, Lytton QLD 4178

**P** 1300 780 654

**E** solutions@bowenstorage.com.au



[www.bowenstorage.com.au](http://www.bowenstorage.com.au)

