



Space-efficient ColbyRACK system optimises new Malmar DC storage

Malmar Group Director, Dave Turner (left), with Alex Heska, National Sales Manager, Total Storage Systems.

Malmar Enterprises, one of Australia's leading wholesale distributors of gifts, novelty products, toys and homewares, has developed a purpose-built distribution centre (DC) at Upper Coomera on the Gold Coast.

Malmar Enterprises

A key feature of Malmar Enterprises new DC is its comprehensive range of space-efficient ColbyRACK pallet and carton storage systems, which closely follow the DC's building column profile, optimising storage capacity and enabling Malmar to store up to 9,000 pallets within the 9,000 sqm distribution facility.

Malmar Group Director, Dave Turner, said: "A lot of our products are in big and bulky cartons, so utilising storage space efficiently is essential in order to minimise our warehousing costs."

Mr Turner added: "We see handling our own distribution as a core strength."

"As part of our business model, Malmar has developed several warehouses over the past decade, and we've learned a lot over the years.

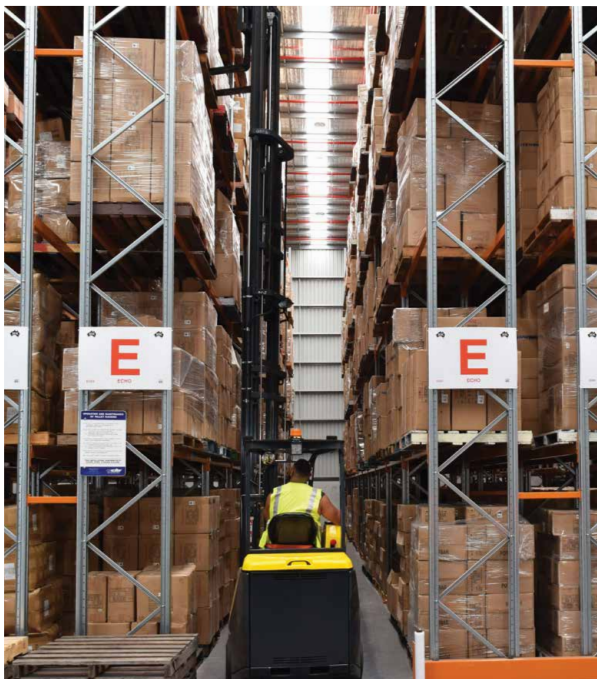
"One of our key findings has been that not all storage systems are equal."

New DC designed to support growth

Malmar needed a new streamlined head office and DC that satisfied its current distribution requirements and provided capacity for future growth.

Malmar's previous DC was constrained with 8 m high racking, with the building's fire protection system adversely impacting the operational efficiency of the system.

The DC's new high-density storage system was designed to remove all of the operational restrictions inherent in the previous system. The new ColbyRACK storage systems have enabled Malmar to significantly improve the efficiency of the DC's order picking, packing and shipping operations.



The use of forklifts with rotating masts enabled aisle widths throughout the pallet storage system to be just over 2 m wide.

Smart design optimises storage space

A lot of pre-design discussions between Malmar and Colby made it possible to optimise the available storage cube and minimise the total cost of the installation. The building was designed around the racking and storage requirements, not the other way around.

A good example of this was Colby's design of the storage system to satisfy new town planning and fire safety requirements, with the final height of the storage system being just under the statutory overall cubic storage requirement for in-rack sprinklers. This delivered significant cost savings and eliminated potential on-going maintenance issues for Malmar.

To prevent storage system damage during normal operations, a combination of heavy-duty rack end protection and Colby Protect-a-Rack upright protectors minimise the potential for accidental damage to the racking during pallet put-away and retrieval.

Mr Turner added: "As well as optimising the overall system design, Colby's RACKMAN® software was a great visual aid in being able to quickly assess how any layout changes would impact the strength, integrity and capacity of the racking.

A VNA (Very Narrow Aisle) of just 2042 mm pallet to pallet was achieved, optimising the warehouse's total pallet storage capacity.

ColbyRACK's accuracy simplifies and speeds installation

Commenting on Colby's installation of the 9,000 pallet capacity storage system, Mr Turner said the project is testament to the quality of ColbyRACK components and the skill and experience of Colby's rack installation team.

Such are the high-quality standards to which ColbyRACK is made, the team responsible for installing the racking could mark out and pre-drill all of the holes – around 3,500 – for the rack upright baseplates in the slab prior to installation, which saved a considerable amount of time, said Mr Turner.

"This shows great confidence in the dimensional accuracy of the ColbyRACK system," he said.

"I don't believe any other pallet racking supplier or installer would have this confidence."

Having the rack layout established prior to commencing construction of the DC also delivered benefits, added Mr Turner.

"For example, it enabled us to make sure that all of the floor slab joints would be located within bays of racking, minimising the potential for damage to the slab joints by forklift traffic over time," he said.

ColbyRACK system configuration improves order picking efficiency

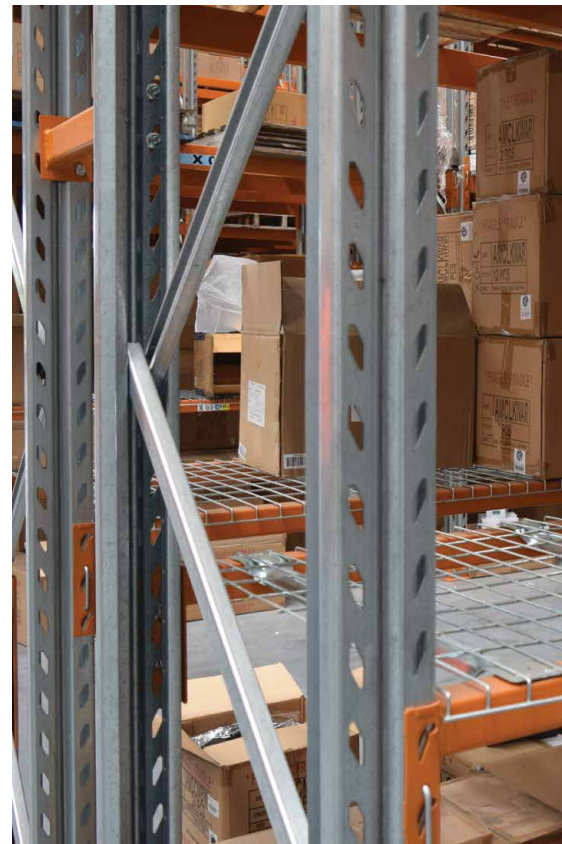
A key driver in the design of the DC's order picking systems was integrating the capacity to keep around one week's worth of picking stock on hand within a compact area in the pick face.

This enabled Malmar to compress the pick face by more than a third, providing significant time savings for order pickers travelling the same picking path every day.

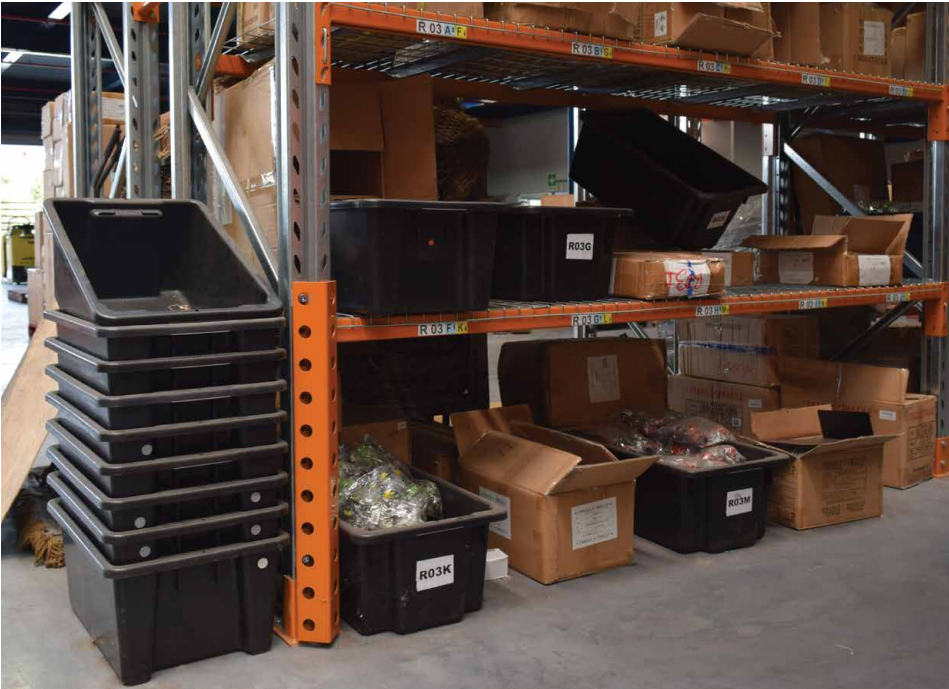
Malmar's racking configuration enables the storage of either 6 pallets high or 5 pallets high plus a long span shelving level depending on the location.

In total the storage system provides around 9,000 pallet locations and more than 400 floor level pick from pallet locations. In the order picking area, 167 bays of longspan shelving provide more than 430 lineal metres of shelf space.

Below: Wire mesh decking is used on all longspan shelving locations.



Left: Structural columns are integrated within the racks. Right: Custom-width bays of racking enable space between structural columns to be utilised.



Colby rack protectors minimise the potential for damage to the DC's longspan shelving system.

DC designed to cost-efficiently meet seasonal peaks

A large part of Malmars's business is driven by seasonal events such as Christmas, New Year and Mother's and Father's Day.

"During these special event periods our order levels soar," explained Mr Turner.



"Having a storage system in which any pallet can be placed in any location gives us great operational flexibility and delivers significant productivity gains.

"Being able to accurately scale up throughput, without a corresponding increase in labour, enables us to respond to the increased demand in a timely and cost-effective way."

Streamlined goods receipt

A significant improvement for Malmars is the efficiency of the new DC's goods receiving area.

"We made sure when designing the new DC that our goods receiving process would be as streamlined as possible," said Mr Turner.

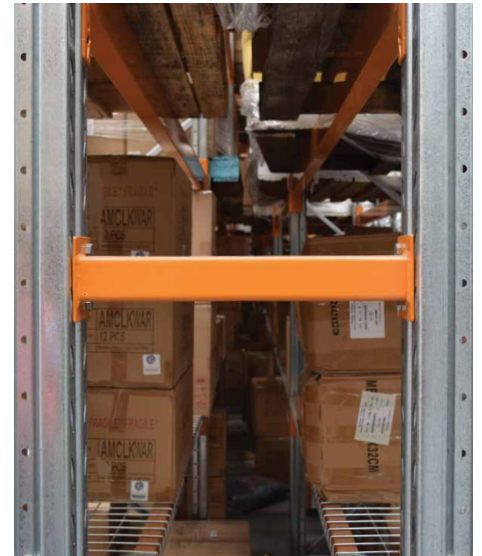
"By doing so, we are now able to keep incoming container stock close to the relevant bulk pallet put-away locations, which minimises materials handling and forklift travel."

Storage system design finalised before building completed

Commenting on the design phase of the project, Mr Turner said: "Colby Storage Solutions' attention to detail and willingness to explore multiple options throughout the design process was excellent."

From the conceptual design to multiple iterations of racking layouts, the storage system design was completed before the building envelope was constructed.

450 mm long fabricated backties provide extra back-to-back clearance between adjacent pallets, significantly improving safety when handling pallets at heights of up to 11 m.



This allowed the optimum placement of structural columns for the desired configuration, and provides the future flexibility for non-VNA layouts to integrate structural supports.

Designing the system layout at an early stage of the project significantly reduced building costs, with the optimised column layout minimising the cost of building and achieving a better value-build price, without sacrificing rack or aisle spacing.

Colby's extensive experience the key

"Colby Storage Solutions impressed us with their professional approach, and their decades of experience in the field was instrumental in the quality outcome that was achieved," added Mr Turner.

"While many rack suppliers are keen to quote standard rack products, Colby Storage Solutions took a different approach by asking lots and lots of questions about our needs, how the system would be utilised, and identified any issues that could hinder our day-to-day materials handling processes.

"Numerous options were evaluated and challenged and the data derived from the start of the process to the end proved invaluable to the excellent outcome."

Despite all of the additional effort the comprehensive evaluation process by Colby involved, we were pleasantly surprised when comparing multiple quotes on a like-for-like basis, he said.

Storage flexibility a key design driver

“To ensure pallet slotting flexibility throughout the entire storage system, we opted for a standard heavy-duty beam profile, which enables us to put any pallet in any location,” explained Mr Turner.

Storage space efficiency is further optimised by the use of VNA (Very Narrow Aisle) forklifts with rotating masts, which enabled aisle widths throughout the pallet storage system to be just over 2 m wide.

“The design and strength of the ColbyRACK storage system enabled us to utilise all of the available headroom within the DC by using rack frames up to 12.5 m high, with no loss of storage on the perimeter single sided racks, which none of the other suppliers could achieve at the same cost,” said Mr Turner.

A single size box beam was used for all

pallet storage levels, which makes it quick and easy to replace any beams that are accidentally damaged.

Storage system commissioning

“We are very proud of our warehouse team who managed to bump-in more than 8000 pallets of stock using new VNA forklifts with only a single beam being damaged in the entire installation and bump-in process,” said Mr Turner.

“Knowing that ColbyRACK is manufactured in Australia gave us great confidence in both the high quality standards being met and Colby’s ability to meet our tight construction program deadlines,” he said.

“When construction had reached the point where we could hand over the warehouse to Colby for the rack install, Colby really pulled out all of the stops to make sure

the storage system was installed prior to building certification, which saved us potentially additional costs.”

To ensure installation would run as smoothly and efficiently as possible, Colby liaised closely with Malmar’s builders to ensure the post-tensioned concrete slab cables were not affected by the rack installation process.

Even the building’s wall fly bracing was allowed for and designed into the positioning of the racking against the walls and the end-of-aisle turning requirements.

Another feature of Colby’s storage solution is the rack’s 450 mm clearance between back-to-back pallets. This provides a bit of breathing space when stock overhangs pallets and – when you are handling pallets at heights of up to 11 m – this is a very nice luxury to have, added Mr Turner.



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Colby Storage Solutions

With more than 50 years experience in designing and manufacturing industrial storage systems for an extensive range of business applications in Australia, Colby Storage Solutions is a leading distributor of warehouse racking and shelving.

Colby Storage Solutions Australia-wide network of independent distributors ensures customers receive professional support and advice on all matters concerning storage and materials handling.

We provide reliable delivery, installation and support services, and can assist customers in sourcing virtually everything they need from pallet racking and shelving, to packing benches, pallet trucks, bins, totes, carts and pallet or package conveyors. Our experienced team of distributors can provide you with valuable advice on design, layout, equipment and warehouse safety.

The DC’s ColbyRACK storage system provides capacity for more than 9,000 pallets.