



BIG W
Hoxton Park, NSW, Australia

BIG W's DC features Australia's first Multishuttle® GTP system

Australian general merchandise retailer, BIG W, has a network of 160 stores throughout Australia and a growing online business. Its new, award winning distribution centre (DC) in Hoxton Park, Sydney, is the first of its kind in Australia and incorporates a sophisticated array of materials handling and order fulfilment technologies and software. Key among the many innovations is Australia's first Dematic Multishuttle® automated storage and retrieval system (ASRS), which buffers, sequences and delivers stock to RapidPick goods-to-person (GTP) order fulfilment stations, enabling a single operator to process up to 24 orders at a time.



The Challenge

For the past 15 years BIG W had been running two DCs, one in Queensland and the other South Australia. Due to the growth of its business, BIG W needed a third DC to service current distribution requirements and to support future store and online expansion.

Switching from a two DC to a three DC distribution network required significant restructuring of BIG W's supply chain network, including extensive logistics systems simulation and transport modelling. With a large proportion of its SKU range coming from overseas as indent stock, the addition of a third DC to the distribution network increased the complexity associated with assigning and allocating stock correctly to match seasonal catalogue and DC distribution requirements.

"When the design was on the drawing board, we looked at best practice logistics and the thing that kept on coming up was Goods-to-Person, and the benefits that GTP provides by having the stock come to the picker, rather than the picker having to walk around picking every individual item."

Philip Town, Logistics Manager, BIG W

Our Solution

The new Hoxton Park DC was set up as a mirror image of the other two DCs, with all three being full range Regional DCs. The benefit of this was that BIG W substantially reduced the average travel distance to their stores. This innovation alone delivered significant transport, cost and environmental savings to the BIG W business.

"Dematic came on board very early and were key to the design of the DC. They were the ones who put forward the GTP solution and put a lot of time and effort into helping us to understand that it was the right solution for our business."

Philip Town, Logistics Manager, BIG W

Dematic's solution included Australian firsts for materials handling and order fulfilment technologies. Key among the many innovations within the 89,000 sqm DC was the first Dematic Multishuttle® storage buffer and sequencing system in Australia. The 29,400 tote capacity Multishuttle supplies a range of lower volume, higher value split case SKUs to the first automated 1:24 GTP order fulfilment stations in the country.



Despite being the first company in the southern hemisphere to implement the new technologies, BIG W was so confident its state-of-the-art order fulfilment systems would be up to the task, the DC went live with the ‘big bang’ approach on March 26, 2012, servicing all of its stores at the same time, and achieving expected throughput volumes from day one.

Australia's first Dematic Multishuttle®: a step change in ASRS

Unlike conventional ASRS, which typically use cranes to access stock, Dematic's new Multishuttle system uses a fleet of self-propelled carts to retrieve and put goods away in an ultra space-efficient storage system, at very high speeds. Lifts at the end of each aisle transfer goods in and out of the system via integrated conveyors. At BIG W, the Multishuttle is equipped with 70 Multishuttle carts, capable of performing over 30,000 storage and retrieval cycles per hour.

Dematic RapidPick® GTP System

Multishuttle's very high throughput rates make it an ideal buffer and sequencing platform to facilitate GTP picking. Dematic's RapidPick® GTP solution for BIG W uses a 1:24 configuration which enables up to 24 separate orders to be picked concurrently by one operator and, with eight GTP workstations, it gives BIG W the ability to process up to 192 orders at a time.

With a design objective of working smarter, not harder, the RapidPick GTP workstations optimise operator comfort, minimise fatigue and ensure

sustained productivity. The operator does not need to move their hands above shoulder height or extend arms beyond a comfortable reach. Stock and shippers are automatically delivered to, and removed from, the workstation, eliminating the need for operators to lift or push cartons and totes.

When totes carrying stock for orders arrive at the GTP workstations, a display panel indicates which of the 24 orders require items, with individual put-to-light (PTL) displays on the 24 order locations indicating the quantity required for the relevant orders.

The operator retrieves the required number of items from the tote, and allocates the stock to the relevant orders, pushing the PTL buttons to confirm each put-away. When all orders requiring the stock have been fulfilled, the operator confirms they are finished picking from that tote, and the next tote of stock presents itself to the operator within seconds.

When a carton is full or an order complete, the operator simply pushes the carton onto a take-away conveyor. The conveyor system then routes the carton to the DC's Crossbelt Sorting System, which diverts the case down the appropriate shipping lane for despatch.

Another benefit of the GTP operation is that it enables the Hoxton Park DC to pick and pack orders in family groups. This makes put-away to the relevant department within the retail store much quicker and easier.

Smart, safe, efficient solutions

At 89,000 sqm, Hoxton Park is the largest footprint DC in the Woolworths network. The flow-through design DC is nearly half a kilometre long and about 200 m wide.

The DC has the capacity to house more than 50,000 pallets within a combination of conventional ColbyRACK pallet racking, drive-in racking, and pallet live storage, within several walk-pick-to-belt case picking modules.

The DC also includes a pallet live storage installation with the capacity to hold over 2,500 pallets up to 12 deep. This is used to pre-pick and stage orders for despatch during special events such as Christmas, Easter, Mother's and Father's Day.

A big improvement for BIG W

BIG W has been really pleased with the way the Dematic system has performed, experiencing no major issues or downtime, and have served every one of their stores every day, without fail.

“We are now achieving significant benefits out of our GTP system with pick rates of around 500 order multiples per hour per station, which compares very favourably with our conventional pick-to-belt throughput of about 120 order multiples per hour.”

Philip Town, Logistics Manager, BIG W