



Matalan

Corby, UK

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CONSULTANCY APPROACH

SDI's unique consultancy approach has resulted in a solution that is future-proof, being able to meet the future outputs needed, and other precise needs of the customer.

AUTOMATED SOLUTION

A new system that increases capacity and also decreases the amount of sortation runs per day, making it a more efficient materials handling solution.



THE CHALLENGE

Matalan was developing a new Distribution Centre in Corby, Northamptonshire, to provide additional capacity to support the growing number of stores it operates in the south of England. The store was required to store both hanging and boxed goods and the retailer was looking for an automated materials handling solution to maximise the productivity of the site.

has been established to provide the company with the extra capacity it needs to support its growing number of stores in the south of the country. By June 2005 the Corby DC will be serving some 90 stores in the south.

The new DC, operated by Wincanton plc, will store both hanging and boxed goods. It marks Matalan's first use of a boxed-item sortation system.

THE SOLUTION

SDI won a competitive tender to design, build and project-manage the new installation on the strength of its deep understanding of fashion logistics; the highly pragmatic nature of the solutions proposed; and the excellent track record of the systems it has already installed at Matalan's Skelmersdale distribution centre.

The SDI solution, built at the 25,500 sq m low bay warehouse, comprises separate systems for hanging and boxed items. The control software for both the boxed goods and hanging garment storage and sortation systems was specially written for the Corby installation by SDI's sister company RTI.

To give the entire installation a very high degree of flexibility to cope with the future retailing trends, and as a measure of security, the software for

both the systems is interchangeable. To optimise the systems accuracy and speed throughput, multiple-head scanning units are used throughout to ensure barcode labels can be read.

“SDI understands the fashion logistics business inside out. The company has a determinedly hard working partnership-based, approach to doing business. We are comfortable working with them.”

Les Bielby, Wincanton's Project Director

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THE SYSTEM

The hanging garment system has the capacity to handle almost 1.2 million items. Eight receiving bays serve the Hanging Garment system, the core of which is a three-tier Goods On Hangers (GOH) zone. Sets of garments are unloaded onto height-adjustable telescopic booms at the eight receiving bays.

The items are then placed onto 100mm bar-coded plastic trolleys. Each boom feeds five holding lanes, which have the capacity to accommodate 4,960 trolleys (around 22,800 individual garments). Colleagues apply barcoded store specific, 'Licence Plate Number' (LPN) labels, generated by the DC's warehouse management system (WMS), to the garments on the trolleys. The LPNs are then scanned to log the items into the inventory control system.

Two pin-chain powered conveyors take the trolleys up to a pre-sort area on the mezzanine floor where their barcodes are read by in-line scanners. Here there are three lanes each capable of handling 1,500 trolleys sets per hour. It is at this point that the individual garments are matched, by manual scanning of their barcodes, to the trolleys that are carrying them. From here on through the system, the goods are routed automatically by scanning the trolley barcodes.

From the scanning zone the trolleys pass through the first of two bar-codes reading per-sorters and are directed, by PC control, to one of three further hang sorters for either static storage or cross docking for delivery to store. All three GOH tiers have virtually identical layout, with central transverse lane from which the goods are diverted into their allocated storage zones. There are also two areas where items are transferred from their trolleys and hung, batched by SKU's onto static storage rails, from where the orders are picked. The top floor also has a further 176 lanes, holding 32,120 sets, for new products and stock ready for dispatch to stores.

All locations are bar coded, and picking is driven by RF commands relayed to hand held scanners. Garments are picked from storage and loaded back onto trolleys.

The trolley bar codes are scanned and they are released onto pin-chain take-away conveyor circuits to pass on to a despatch sorter that reads trolley bar codes. This sorting operation identifies the stores to which the goods will be sent. The dispatch sorter feeds 28 overhead gravity lanes, which lead down to 14 despatch bays. On command from each bay the gravity lanes can be released in sequence onto the pin-chain conveyor that feeds telescopic booms reaching into the delivery vehicles.

SDI's boxed item system occupies around 50 per cent of the low bay warehouse, served by six goods-in bays. Loose-loaded goods are removed onto telescopic belt booms and transferred to a ground level area for manual palletising and labelling. At peak periods the four booms are expected to be handling around 41,000 cartons per day.

Every pallet is given a bar-coded LPN label, the details of which communicate with the WMS by RF. The WMS then routes the goods to one of three locations. Slow-moving items and long term bulk stock goes into a 16,120 pallet location high bay store, served by three automatic storage and retrieval (ASRS) cranes, in an adjacent 31.600 sq m warehouse. Moderately fast-moving stock is sent to a 4,525-pallet location narrow aisle racking storage zone. Fast-moving stock, which is already allocated to specific stores transferred to two, three-tier picking towers for cross docking.

The picking towers consist of three-high, four deep live pallet racking, accommodating 1,716 pallets and providing 429 pick faces. The WMS directs colleagues, by RF communication to wrist held scanning terminals, to the required picking location. The goods' LPNs are scanned to confirm pick, and the items are placed onto pick-to-belt take away conveyors. Spiral belt

conveyors handle the picked stock between levels of each pick tower, transferring picked goods to the boxed-goods sorter.

There are two dedicated lines, one from each pick tower, which merge with a re-circulation loop into one line ahead of the sorter's induction point where all goods are aligned for automatic scanning. As items are inducted onto the sorter loop their barcodes are read by an array of in-line scanners. The items are then discharged, by their pop-up wheels, as they get transported onto the 40 output 'store chutes'. The sorter has the capacity to handle around 4,000 cases per hour – more than one case per second.

Each of the 40 store chutes has declined powered belts and gravity rollers that take the goods down to the dispatch bays. Here colleagues load the items into roll cages, scanning each carton to confirm picking to the WMS. Up to 1,800 roll cages can be marshalled in the ground floor area adjacent to the 14 dispatch bays.

ABOUT SDI GROUP

SDI group is an innovative provider of systems and solutions to the retail, wholesale, fulfilment and e-commerce industries for all aspects of distribution centre materials handling.

As both consultants and system integrators, the company provides clients with a total logistics solution package, which includes materials handling consulting, as well as design, engineering, fabrication, installation and integration services.



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