

SDIGreenstone's Radio Programme for George

SDIGreenstone has completed the first phase of a massive automated storage and sortation system at ASDA's custom-built 'flagship' distribution centre (DC) in Lymedale, Newcastle-under-Lyme. As well as designing and building the storage and conveying equipment and process control protocols, SDIGreenstone handled the complete project as a 'turnkey' systems integrator.

The 25,000 sq m Lymedale DC, dedicated to ASDA's highly successful George clothing brand, the UK's fastest-growing retailer, currently has the capacity to hold more than 1.8 million garments. **SDIGreenstone** has installed systems to handle both flat (boxed) and hanging items enabling ASDA to undertake more than 1.4 million order-picks per week. A large part of the installation uses radio frequency identity (RFID) tagging, interfacing with bespoke process control software, to manage inventory storage and direct order picking.

The recently-completed installation comprises a four-storey mezzanine to hold flat boxed items, a ground-level central receiving and despatch area, and a three-tier, nine metre high, zone for hanging garments.



Flat Boxed Items

Incoming boxed items are transferred from delivery vehicles by flexi-conveyors and placed on pallets in the ground floor receiving area. **SDIGreenstone** has incorporated two two-tonne capacity lifts into the four-storey mezzanine, by which the pallet-loads of boxed items are taken to the required floor. Goods are stored in flow racking, four high, four deep, providing around 60,000 locations, with picking faces for 20,000 SKUs. Orders are either retrieved as full boxes or picked individually from the racks into totes, and transferred back down to the despatch marshalling zone. The boxes and totes are palletised for delivery to George outlets throughout the country. The flat-goods section of the DC is currently handling about 50,000 cartons of product per week – which is more than a million individual items.

Hanging Garments

Incoming hanging goods are removed from delivery vehicles on boom rails and transferred to the receiving area, which has a 30-row buffer zone of static hanging rails. The items, grouped by SKU, are then manually transferred onto **SDIGreenstone's** custom-designed flight-bar hangers, known as 'jets'. Each one-metre long



jet is capable of holding up to 40 items. Incorporated into the end bracket of each jet is an RFID tag. The jets are manually moved along rails to an induct point adjacent to the receiving area, where information is written to the RFID tag, via a PC, to allocate a storage location to the jet.

RFID technology was chosen in preference to bar coding because of its greater flexibility – infinitely variable information can be written to the tags instantly – the speed with which the tag can be read and responded to by in-line sensors within the system and the tag's ability to handle more data. The chips used in **SDIGreenstone's** system have a capacity of 7kb.

SDIGreenstone has built three separate modules, dedicated to specific SKUs, within the hanging-goods storage system. Each module has its own in-feed and output conveyor. As jets move along a powered conveyor their programmed RFID tags are read by in-line scanners linked to **SDIGreenstone's** control software, which was written in-house for the George system. The jets are then automatically diverted to the appropriate module's in-feed conveyor which takes them to the required storage zone. Here they are manually off-loaded onto static rails in the goods on hangers (GOH) storage lanes.

Each of the three modules has 120 31-metre GOH

lanes and the powered and free conveyor system serving them is more than seven kilometres long. The conveyor system itself has the capacity to carry 4,500 jets – more than 200,000 individual garments.

Orders are picked manually onto jets from the GOH lanes. Goods are assembled by SKU and moved into a buffer holding zone. From here they are transferred to

the powered output conveyors which take the goods back down to the ground-level despatch area where they are manually sorted by store and transferred to dedicated static rail store lanes. The hanging items are overbagged, and transferred onto rolling rails. The empty jets are then ready to re-enter the system. When they are used again the existing information on their RFID tags is overwritten with new data entered at the induct point.

In the despatch area the hanging garments on rolling rails come together with the flat garments, in cartons or totes, which have been transferred from the four-storey mezzanine. The goods are combined, within allocated time slots, into specific store consignments and loaded onto delivery vehicles.

SDIGreenstone has built numerous refinements into the conveyor and storage installation including gentle action pneumatic switching to divert jets round the system, colour-coding for all the in-feed and output conveyors, 'soft stops' to prevent product damage on rails where items accumulate, channels set into the flooring to accommodate long garments and snatch-free conveyor drive.

SDIGreenstone acted as main contractor/systems integrator for the project, which included lighting, fire protection and heating and ventilating as well as the main storage and sortation systems and control software. The company was overseeing as many as 25 other contractors.

"We appointed SDIGreenstone as main systems integrator because of their proven track record in retail distribution, and the impressive front-end consultancy service they offered," says ASDA's George McKerracher. *"But just as important was their highly flexible, partnership-base approach, and ability to think outside the box to come up with creative solutions. SDIGreenstone also has a very strong work ethic."*

The Lymedale DC was custom-built to accommodate state of the art automated processes, to provide sufficient volume to keep pace with George's dramatic rise in the UK – "annual double-digit percentage sales growth", according to a company spokesperson - making George the country's fastest-growing retailer. Automated storage and sortation accords with ASDA's philosophy of Everyday Low Costs – EDLC.

"Automation is not a cost but an investment," George McKerracher explains. *"It gives greater efficiency at lower cost, more volume and more capacity within the DC, and enables us to respond rapidly to changes in the fashion market place."*

SDIGreenstone is currently working the next phase of the Lymedale DC's growth. A 10,000-plus sq m extension to the existing building will accommodate a fourth hanging-garment module – which, with the mezzanine zone, will bring the DC's total size to almost 93,000 sq m. **SDIGreenstone** will also be installing a fully-automated RFID-driven hanging garment sortation system to handle items arriving from all four storage modules, and is working on a bar coding system to provide full traceability for the rolling rails delivered to the stores.

It is estimated that the expanded DC will have the capacity to achieve more than 2.5 million order picks per week.



Our Clients: Success Stories

We want to thank each and every one of the friends we have made over the past 25 years of service to the retail and retail support industries. Your success stories have become our success stories! We are justifiably proud of the success that you have had in the implementation of our systems, helping to make your organizations more effective, more efficient and better places to work.

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How to contact SDI worldwide

SDI Industries, INC.
Contact: Wei Wei Scott
SDI Industries, Inc.
13000 Pierce Street
Pacoima, CA 91331, USA
Tel: (818) 890-6002
Fax: (818) 890-2858
Email: marketing@sdiindustries.com

SDI Industries - France
Contact: Jean-Marc Moulin
1 Blvd. John Kennedy
91100 Corbeil Essonnes, France
Tel: +33 (0) 1 60 88 28 60
Fax: +33 (0) 1 60 61 25 96
Email: commercial@sdi-industries.fr
www.sdiindustries.fr/index.htm

SDI Industries - Italy
Contact: Andrea di Bella
Via Gabriele D'Annunzio 2/53b
Genova, Italy 16121
Tel: 39-010.59.59.497
Fax: 39-010.57.61.501
Email: adibella@sdiindustries.com

SDI Promech
Contact: John Hamilton
Waterland 10, 1948 RK Beverwijk
The Netherlands
Tel: 00 31 23 5319004
Fax: 00 31 23 5320095
Email: sales@sdipromech.nl
www.sdipromech.nl

SDI Iberia
Contact: Kees Frowein
Can Portacreu
Barrio Les Torres 3a
08810 Sant Pere de Ribes
Barcelona, Spain
Tel: 00 34 93 8102306
Fax: 00 34 93 8102306
Mobile: 00 34 600 929 789
Email: sdi-iberia@telefonica.net

SDI Logistics Mexico
Av. Mariano Otero 3431, Oficina 510
Col. Verde Valle, 44550
Guadalajara, Jal. Mexico
Tel: (52) 3-818-4335 Tel
Fax: (52) 3-818-4342 Fax
Email: jmichel@sdiindustries.com

SDI Industries - Australasia
Contact: Fraser Smith
Unit 18, 10 Victoria Avenue
Castle Hill, NSW 2154, Australia
Tel: 61 (0) 2 9680 8880 Tel
Fax: 61 (0) 2 9680 8485 Fax
Email: fsgreenstone@aol.com

ASDA
Lymedale,
Newcastle-under-Lyme, UK



Conveying Ideas and Merchandise



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