

Farmers, Whitcoulls and Stevens

Design/implementation for retail mega distribution centre



When JPL Group moved to consolidate the distribution systems for Farmers, Whitcoulls and Stevens and establish an e-store, Dexion was engaged to help design and implement the material handling system.

Background

Farmers, Whitcoulls and Stevens are market leading retail brands providing fashion, beauty, electrical goods, books, stationery, games, toys and kitchenware through more than 150 physical stores New Zealand-wide plus on-line e-stores.

Business Challenge

When owner JPL Group moved to consolidate the distribution systems for the three retailers and establish an e-store in a new mega distribution centre at East Tamaki, Auckland, Dexion was engaged to help design and implement the material handling system.

“We previously had multiple distribution centres across Auckland doing the same processes and we wanted to bring these into one facility to be more efficient as a group,” explains a Farmers representative. “We also wanted to develop an e-commerce fulfilment operation to meet the rising trend of customers wanting to purchase goods on-line.”

From the outset JPL Group had a clear vision for its new state-of-the-art distribution centre to minimise costs and maximise efficiencies. A towering 26 metre (six storey high) new building with a total floor area of 45,000m² was designed to be built next to and integrate with the existing Farmers distribution centre.

Now complete after two and a half years of planning and construction, the new building is unique in New Zealand, maximising storage capacity in its floor space with 18 metre high racking providing 24,000 pallet positions. Turret trucks specially commissioned from Germany are wire-guided on precision-laid concrete floors laser-screed flat to within one millimetre.

The new building has a 25,000m² main floor area (equivalent to more than three football fields) and a 14,500m² concrete mezzanine floor six metres above the main floor with ramp access for trucks, a multi-storey carpark, offices and a photographic and television production studio for marketing purposes.



Dexion was invited to provide a proposal for the design, supply, delivery, installation and commissioning of a picking module and shipping sortation system for the new distribution centre including all associated conveyor, software and static storage systems.

“We presented Dexion with a scenario and the potential benefits we wanted to achieve with our planned integrated distribution centre and Farmers e-store and challenged them to come back with a solution,” says a Farmers representative

“Dexion engaged with us in defining processes and helping us to design the space for efficient and effective use. Dexion was key to our whole design process – their people are great at conceptualising to come up with practical solutions,” a Farmers representative

“This wasn’t a project where they could just sell us some racking. Dexion had to own the solution from design to council consenting for seismic, fire and egress regulation through to implementation – and they did just that.”

“Working with JPL Dexion developed a three tier mezzanine storage system to house the e-store business. This consists of 9,000m² of footprint storage for an array of different products.”

Solution

Dexion senior systems executive Dan Austin said JPL Group’s ambitions to build a state of the art mega distribution centre that would handle future growth requirements combined with its approach of working closely with suppliers for the centre’s design and development gave Dexion the opportunity to provide super smart solutions.

“Our solution integrates TGW conveyor and sortation componentry, Amberflex Spiralveyor and Speedlock storage systems with Dexion’s RDS software,” says Austin.

Dexion supplied TGW conveyors to carry goods from the receiving zone in the former Farmers distribution centre to the new building which now consolidates storage and despatch for Whitcoulls, Stevens and the new on-line e-store.”



“Working with JPL we developed a three tier mezzanine storage system to house the e-store business. This consists of 9,000m² of footprint storage for an array of different products, replicating every SKU in a physical Farmers store,” says Austin.

“The Spiralveyors move product between the three tier mezzanine and the ground floor sortation area. Incoming cartons are delivered by a high speed sliding shoe sorter, which uses barcode technology to divert products to the correct despatch lane. This machine is the first of its kind in New Zealand and is capable of sorting thousands of cartons an hour.

“For on-line customer orders from the mezzanine storage area we implemented a voice directed batch picking system – the person picking the order gets their instructions via headset from Dexion’s real-time distribution system or RDS, providing a paperless picking environment.

“Picked items are taken to the ground level packing area by conveyor and Spiralveyor to be made into orders with the help of an innovative put-to-light or PTL system. Lights flash up on a cubbyhole shelf so the packer can quickly and easily bring together all the various items that have been picked from different parts of the e-store for a single customer order.



“Packed orders are then placed on an outbound conveyor that takes them to the despatch area. The on-line operation using the batch pick and sort system can process up to 3,000 orders a day, making it probably the largest on-line operation in New Zealand.”

In addition to the e-store, Dexion has worked with JPL Group to modernise and improve the distribution to Whitcoulls and Stevens physical stores.



Behind the physical storage, conveyor, sorting, picking and packing systems are sophisticated information systems. All the hardware and equipment are integrated via the Dexion Command and Control system for full system monitoring and management.

Dexion’s RDS controls the put to light modules and pickers receive instructions via radio frequency or voice devices within the RDS picking module. And the RDS interfaces with JPL Group’s centralised backbone SAP enterprise resource planning system.

“Dexion implemented a robust but flexible solution that meets our strategic objectives and can meet the needs of our evolving retail business.”

Benefits

After reviewing the various requirements of Stevens, Whitcoulls and Farmers, Dexion designed a sophisticated solution to allow for the wide variety of processes as well as the needs of any future business that may be located in the new distribution centre.

“The concept for our new distribution centre was borne out of a requirement to secure our supply chain in New Zealand while driving effectiveness and efficiency,” says a Farmers representative.

“Retail never stands still.

“The e-store was a new strategy for us – finding a solution that would work in the retail sector. The amalgamation of the three brands into one distribution centre has been beneficial and has resulted in effectiveness and efficiency gains. We successfully moved three completely independent infrastructures into one operation.

“We needed an adaptive system and Dexion implemented a robust but flexible solution that can meet the needs of an evolving retail business. Dexion has provided an innovative solution that meets our strategic objectives. They stuck to their implementation plan and delivered.

“Technology underpins our business and we see these technologies as being key to our future road map for more efficient customer service.”



Key Facts

Farmers Whitcoulls Stevens Distribution Centre

- 26 metre high building with 18 metre high racking
- 25,000m² main floor area
- 18 carton and spiral conveyor systems
- 22 barcode readers
- Put to light packing system
- High speed sliding shoe sorter
- Supplying 150+ physical stores
- Photography and television production studio
- Multi-storey carpark

Farmers e-store (part of Distribution Centre)

- Three tier mezzanine with 9,000m² of storage
- Voice picking system
- Put to light packing system
- Dexion Real-time Distribution System Warehouse Control and Management