



### Retail Sector

Morrisons is the UK's fourth largest food retailer. With more than 380 stores, the company is growing fast and has embarked on a £multi-million project to re-engineer its IT environment. This has created additional demand for cabling and power at its data centre in Bradford. Served by a 10GBASE-T system, the data centre provides the central hub for Morrisons' communications network and required an ultra-high performance Augmented Category 6 cabling solution to accommodate new infrastructure. Smaller, lighter and easier to install than conventional cables, the '10GPlus Zone' system developed by Brand-Rex has enabled Morrisons to future-proof its network build-out while driving efficiencies in airflow, cooling and power.

Forming the central hub of this communications network is Morrisons' purpose-built HQ in Bradford. Constructed during 2005, the building has been equipped with a state-of-the-art 10GBASE-T network comprising a Brand-Rex Blolite air-blown fibre backbone and shielded Augmented Category 6A/Class E<sub>A</sub> cabling based on the Brand-Rex 10GPlus system. Serving more than 6,000 outlets with Gigabit Ethernet (GigE) connectivity, the Cat6A cabling is future-proof and able to support 10Gbps – as and when required.



Offering a range of branded and own-label products, Morrisons manages almost every aspect of its commercial operation in-house – from sourcing fresh produce, through to processing and logistics. Every week, nine million customers pass through its doors, served by a staff of 117,000. As a 24/7 operation, the company's network infrastructure is business-critical, and is currently undergoing a £multi-million revamp to meet the demands of the growing organisation.

At the heart of the network is the data centre, which incorporates core switching equipment supporting voice and data communications, a Storage Area Networking (SAN) fibre channel infrastructure based on a Terabit server cluster, and a DWDM dual-routed fibre-optic link to a separate disaster recovery site. Most IT applications are delivered via a private wide area network (WAN) linking the data centre to Morrisons' branch offices, warehouses and distribution points. The WAN is formed by a combination of leased line, broadband and MPLS connections.

The re-engineering of Morrisons' IT environment is resulting in significant changes in the network's topology and placing additional demands on its data centre. Although some applications are being installed locally at remote sites, the data centre is to house a VoIP (Voice over IP) system, a Microsoft Exchange platform supporting 7,000+ users, and a new demilitarized zone (DMZ). The DMZ will facilitate external connectivity to the Internet, enabling users to securely browse the web and send/receive email outside of Morrisons. Previously, there had been no such direct ISP connectivity.

#### Burgeoning data centre demands

Located on the lower ground floor of Morrisons' HQ, the data centre serves three other floors, with the first and second floors split into four quadrants. For resilience, each quadrant has a comms room connected via dual-routed air-blown optical fibre. The data centre itself houses a huge number of fibre-optic connections, together with a large cluster of storage servers. All horizontal cabling is routed via under-floor basket trays, but with a substantial amount of hardware still to be installed, a major concern was accommodating the growing volume of cabling required.

*"Going forward, it could certainly have got quite messy with all the new hardware and thousands of cables going in,"* recalls Darryl Shears, Data Centre Manager at Morrisons.

*"With continuing expansion, we were facing the same issues that many large organisations do in terms of driving data centre efficiencies – namely power, cooling and airflow."*

Keeping business-critical equipment cool is essential, particularly as the IT environment becomes more densely populated with hardware and cabling.



*Pictured: Augmented Category 6 Zone Cable*



*Pictured: Augmented Category 6 Vs Zone Cable*

*“More cooling requires more power, which presents a cost challenge,” says Shears.*

*“Reducing the amount of space required for cabling in the floor void would help improve the airflow to our equipment – and the more airflow we have, the more efficient the cooling.”*

However, with cable intended for 10GBASE-T applications, it is vital to protect against ‘alien’ crosstalk – the noise picked up from adjacent cables in tightly packed spaces and pathways. As a result, conventional shielded cabling can be quite bulky when compared to other forms of copper cabling.

As an existing Brand-Rex customer, Morrisons had been aware for some time that a new Augmented Category 6 (AC6) cabling solution was being developed specifically for use in challenging environments. Called ‘Zone’ and part of the Brand-Rex 10GPlus family, it is a ClassEA performance product with an outside diameter of 5.4mm, making it the smallest cable on the market with such a high specification. It is also 30% lighter and more flexible than conventional shielded AC6 cables, making it easier to install. Suitable for channel lengths of up to 70m, it is ideal for data centres, server rooms and other environments where space is at a premium.

#### **Feeling the benefits**

*“Certainly, we were keen to get the new Zone cabling installed and once I received the specifications and saw how I could go about constructing a system on-site, I realised I could save a lot of space in server cabinets and under the floor. Most importantly, I could see how the Zone cabling would help improve airflow and therefore efficiencies and cost,” adds Shears.*

Express Data, the installer that worked with Morrisons’ IT team to design the original structured cabling system, was contracted to deliver the Zone cabling and, within two weeks, 480 links had been deployed, as well as a high density of Brand-Rex OM3 fibre-optic cabling.

*“The system was easy to install due to its reduced size and the fact we could use the tool-free Snap-in-Jack,” confirms Kevin Forrest, Divisional Director at Express Data Ltd.*

*“This was the first installation of its kind and Morrisons is now planning the installation of an increased number of 10GPlus Zone cabling links to further support the OM3 fibre backbone infrastructure. We have also taken advanced orders from a number of local government and education authorities, in anticipation of the benefits that 10GPlus Zone cabling delivers.”*

This timescale was achieved not only due to the flexibility of the Zone cabling, but also because it can be installed without the use of termination tools. This is possible using another Brand-Rex innovation, the tool-free RJ45 Snap-in-Jack, which supports the 10GBASE-T standard and has been shown to halve installation times.

"It is testament to Morrisons' forward-thinking IT strategy that it has chosen to maintain a future-proof and standards-based infrastructure at its purpose-built HQ using Brand-Rex's 10GPlus System of cabling and connectivity."

Steve Finnegan – Business Development Manager, Brand-Rex

The new Zone cabling has improved airflow throughout Morrisons' data centre and created more room in its server cabinets and under-floor cabling trays. Although Darryl Shears has been unable to analyse the efficiency gains realised – due to continued rollout of new infrastructure – he says that physically, you can feel the difference.

*"When I am stood by the server cabinets connected using 10GPlus Zone, I can feel that the airflow is much more forceful than with the cabinets fitted with conventional cabling."*

Furthermore, Shears has been impressed with the reduction in installation times.

*"Certainly, the installers can terminate cabling a lot quicker. So when we are pushing them on tight deadlines, they are able to meet them. If a job takes less time, then we are saving money too. In light of the all these benefits, we will be using Zone cabling for any future data centre deployments and it will be interesting to see how other major cabling manufacturers intend to compete in this area over the next 6-12 months."*

Settling on a standard structured cabling solution from Brand-Rex has delivered numerous benefits and future-proofed the network as Morrisons' expansion continues. With a 10GBASE-T system running over a Brand-Rex air-blown fibre backbone, future migration from Gigabit Ethernet to 10 Gigabit Ethernet will be seamless, with Morrisons being cable-ready to access 10Gbps throughout the whole office.

*"Brand-Rex is a good name with a good reputation. With a standard structured cabling system in place, everybody knows how something is going to be done. In future, when we are changing things, we know how every cabinet should be configured, how the cabling should be installed under the floors, and how the whole system is structured. This will help us tremendously with future projects,"* Shears concludes.



*"Morrisons is one of the most prestigious retailers in the country and we are delighted that such an organisation has become the first to implement our leading-edge 10GPlus Zone solution, which is currently the only cabling system of its kind in the market,"* added Steve Finnegan, Business Development Manager, Brand-Rex.