U.K. Council selects Nexans cabling with Environmental Monitoring and Intelligent Management for new data centre

Local authority sees sophisticated cabling solution as best way to meet ambitious cost and efficiency targets, and long-term green goals

When Hampshire County Council decided to relocate its data centre, it knew that modern cabling solutions offer more than just connectivity. It discovered that Nexans Environmental Monitoring and Access Control (EMAC) together with Intelligent Infrastructure Management (IIM) enables a broad range of security, efficiency and cost savings benefits.

Thinking service

With an area of 3,750km², Hampshire is the ninth biggest county in England. It is administered by Hampshire County Council (HCC). Hampshire County Council is the third largest shire council in England serving over 1.25 million people, educating 170,000 children, maintaining over 5,000 miles of roads and looking after over 95,000 vulnerable residents.

The County Council is among the top performing counties nationwide, and has been given the top rating for the quality of its services by the Government watchdog, the Audit Commission for the last seven years. It has also received the Audit Commission's highest rating for value for money, with a council tax that is the lowest among all the county councils in the south-east. The County Council is committed to providing value for money in all its services.

Elizabeth II Court is the entire refurbishment of the council's 1960s headquarters in Winchester. The scheme has transformed a tired building nearing the end of its life to a modern and highly sustainable workplace which has enabled HCC to introduce new flexible ways of working and reduce its office portfolio by some 30%. The project is being cited as an example of best practice by the Carbon Trust and is also expected to secure a BREEAM (Building Research Establishment Environmental Assessment Method) rating of `Excellent' – the highest possible achievement.

Thinking ahead

HCC's focus on efficiency permeates every area of operation. So when it relocated its sole data centre to Elizabeth II Court, it naturally sought the most cost-effective answer to every challenge it faced.

Hampshire
County Council

Nexans

Executive Summary

NAME • Hampshire County Council
LOCATION • Winchester, Hampshire, UK
REQUIREMENT • a scalable, flexible cabling solution offering continuing standards compliance
Solution • LANsense, EMAC, LANmark-6A

Mikko Green

Mikko Green, HCC's Operations and Technical Support Manager, recalls: "It's very rare for us to be able to plan a data centre from scratch. We therefore wanted an infrastructure that was scalable, flexible and allowed us to meet best practice standards for up to twenty years. Nexans' offer best suited our needs."

Thinking big

By any standards, the new data centre is sizeable. Using Citrix thin client architecture, it serves 12,000 to 13,000 council employees who are regular ICT users, and also hosts not only the Council's Hantsweb web site (which alone gets more than twenty million hits a month), but also those for other local authorities and voluntary bodies. Small wonder it is home to 600 physical servers, and another 400 to 500 virtual ones.

Nexans' EMAC is intelligent software that allows the council to optimise both power consumption and energy use.

To adequately support such a vast infrastructure, HCC, on advice from Mace Group's ICT consultants, the commissioned IT designer, selected Nexans LANmark-6A high-speed screened copper cabling for its horizontal network enabling 10G speeds for a fraction of the cost of fibre optic alternatives. The 360-degree screened design is completely immune to alien crosstalk (AXT), and allows placement of up to three connection points within ten metres to further save costs and provide critically needed space in tightly packed data centres. Proper shielding also eliminates costly on-site testing for AXT following installation, as well as expensive remedies should any difficulties be revealed. In addition, unshielded Cat 6A cabling is usually thicker and requires extra space creating patching difficulties in tight situations. Thinner, screened cables take less space, and are easier to connect.

Mace Group's ICT consultants have a long-standing relationship with HCC's IT Department, having worked successfully together on developing an overall IT strategy and ICT infrastructure for the refurbished building. The aim was to provide a new data centre with increased levels of capacity and availability, but with similar levels of power and cooling within a reduced footprint. Bob Davis, Senior ICT consultant at Mace Group, worked closely with Mikko Green and key members of his team in translating this vision into a detailed set of specifications and designs that included a standards-based, intelligent infrastructure management solution that was easily upgradeable. "It was clear from day one that a scalable solution was needed for this project," Bob Davis says.

Mace Group strongly believes in being the client's advocate on such projects, which includes working with all involved to achieve the best possible outcome. "Our ethos is to be the customer's 'friend', partnering and working with key stakeholders including construction and supplier teams to ensure all parties are actively involved, aware of the requirements and expected outcomes, and buy-in to the proposed solution," he says. "Nexans pulled out all the stops to provide an advanced, scalable network at an affordable price," he adds. "Once we identified the requirements, Nexans met or exceeded them to create a highly effective infrastructure that, despite a strict budget, the council could be proud of."

This partnership approach gave HCC an appropriate level of control and decision-making, allowing its internal staff to understand and own the resulting solution. Yet at the same time, daily responsibility was delegated to the professional consultants who are adept in operating in this environment.

Thinking green

Another Nexans solution greatly contributes to reducing the centre's environmental costs. Nexans' Environmental Monitoring and Access Control (EMAC) is intelligent

Challenges

- Equip a new data centre with a lasting cabling solution
- Make it as green as possible
- Build resilience while making cost savings

Solutions

- Nexans LANsense Intelligent Infrastructure Management (IIM)
- Nexans EMAC (Environmental Monitoring and Access Control)
- Nexans LANmark-6A high-speed screened copper cabling solution

Benefits

- Long life expectancy
- High performance throughout solution lifecycle
- Immediate and continuing cost savings in network management
- Taking control of any change in the data centre from remote location

software and hardware that allows the council to optimise both power consumption and energy use.

> "We wanted cabling that was scalable, flexible and allowed us to meet best practice standards for up to 20 years. Nexans' offer best suited our needs."

Mikko Green, Operations and Technical Support Manager, Hampshire County Council

It has two elements – intelligent Power Distribution Units (PDUs) and Nexans' LANsense Rack Manager. The PDUs distribute power to individual sockets and can automatically switch them on/off depending on electrical need. PDUs have intelligent connections to the Rack Manager, which provides time/date stamped monitoring of volts, amps and sockets used, as well as automatic e-mail alerts should preset parameters be exceeded. It can also monitor cabinet temperature and humidity levels for maximum performance. By recording these attributes, a highly accurate carbon footprint can be calculated and later examined for any corrective action. "This will let us show provable savings in both power use and costs," adds Mikko Green. In addition to the environmental monitoring and regulation of its network infrastructure, the overall building is among the first nationally to be largely powered by a renewable energy source – a wind-driven ventilation system. It's expected the centre's operational carbon emissions will be reduced to a target performance of 39kg CO_2/m^2/annum from 90kg CO_2/m^2/annum assessed recently.

Thinking smart

A second Nexans software is LANsense, an IIM solution combining hardware & software that automatically provides HCC's ICT team with virtually all the information needed to keep the network operating reliably, securely and at optimum efficiency.

First, LANsense detects and monitors what equipment is at the end of any given network cable. It produces a schematic or floorplan in real-time to convey this information, as well as dispatching e-mail alerts of any moves, additions or changes. The security benefits are enormous, since software also monitors and reports unauthorised connects or disconnects, as well as maintains an audit trail for compliance and legal requirements. "We know what's on the core Data Centre network and can immediately act," says Mikko Green. "Until now, we had no other option other than people physically checking the integrity of our networks. That's a task that is much better automated where possible."

Mikko Green adds that a significant proportion of fault repair is in costly, manual diagnosis, typically tracing cables to check what may be on the other end. With LANsense, this labour-intensive expense is now fully automated at the core and should prove far more efficient for staff, who can be used elsewhere, performing more valuable tasks. "LANsense should help us catch problems such as an accidental disconnection before they become serious," concludes Mikko Green.

Along with the environmental systems, Nexans' cabling and IIM support have provided a modern, standards-based facility that is smart, efficient, and capable of supporting HCC's data needs for many years to come.

IIImace

About Mace

Mace Group is one of the world's most accomplished consultancy and construction firms, with a reputation for finding the best solutions to complex property and real estate challenges. It's ICT consultancy offer provides clients with a full range of ICT services associated with the construction, occupation and operation of buildings.

www.macegroup.com

With energy as the basis of its development, Nexans, the worldwide leader in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry, building and Local Area Network markets. Nexans addresses a series of market segments from energy, transport and telecom networks to shipbuilding, oil and gas, nuclear power, automotive, electronics, aeronautics, handling and automation. With an industrial presence in 39 countries and commercial activities worldwide, Nexans employs 23,500 people and had sales in 2008 of 6.8 billion euros.

In the field of LAN Cabling Systems, Nexans Cabling Solutions offer a complete range of products and value added services providing improved reliability and reduced cost of ownership for Network Managers, together with faster installation times for installers.

In addition to LANmark™ brand cabling systems, Nexans also specialises in LANsense™ Intelligent Infrastructure Management (IIM) products including Environmental Monitoring and Access Control (EMAC) devices.
Nexans offers an unrivalled choice of LAN infrastructure solutions to a global customer based through an extensive network of regional offices and Key Account Management team.

Nexans

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