Workspace
Technology Limited

Server Room Design and Build Service

Client: Johnson Controls Automotive

Project: Johnson Controls Automotive partners Workspace Technology to provide I.T Cabling and Server Room design and build services.

Johnson Controls is a global leader in automotive experience, and has 140,000 employees in more than 1,300 locations serving customers in 125 countries. Founded in 1885, the company has its headquarters in Milwaukee, Wisconsin. The company provides innovative automotive interiors that help make driving more comfortable, safe and enjoyable.

Client Situation

Johnson Control's success in securing a contract with Vauxhall to provide the seats for its brand new vehicle range meant there was a requirement to create a new production facility in Ellesmere Port near Liverpool. Integral to this project Johnson Controls recognised the need for a state of the art energy efficient I.T infrastructure.

Workspace Technology's offered Johnson Controls a solution which encompassed both the structured cabling and a complete design and build energy efficient server room environment.

Structured Cabling

Johnson Controls required a reliable and robust high performance I.T cabling platform that would support communications in both the office and shop floor environments. Workspace Technology recommended Belden's IBDN 2400 Category 6 wiring system.

The installation consisted of approximately 1000 outlets across both shop floor and office areas.

Built on the Data Twist 2400 UTP cable and the CAT6+ connectivity products, IBDN System 2400 installations provided the additional throughput and the type of enhanced, error-free performance needed to support high-traffic and high bit-rate applications to be delivered by Johnson Controls Automotive. The IBDN 2400 System delivers 250 MHz of useable bandwidth.

Johnson Controls required the flexibility to enable ports to be easily relocated within the shop floor area without the need to completely rewire. Unlike other cabling systems on the market Belden offers the GigaBIX IDC high density punch down cross connect system as an alternative to RJ45 presentations. Workspace Technology took advantage of the GigaBIX product to design and deploy high level "sub cross connection" points distributed across the shop floor. These cross connects were fully wired to fixed perimeter cabinets presented in standard RJ45 24 port DataTwist Cat 6 Patch panels. Local "line" data outlets were wired from the nearest GigaBIX cross connect sub distribution point. The installed design delivered Johnson Controls with the ability to cost effectively relocate or add new shop floor points inline with the fast moving demands of production requirements.

Within the server room, Workspace Technology created a Main Distribution Area (MDA) which was wired directly to server racks in compliance with TIA-942 standard. The MDA houses the main cross connect and the core routers and switches for the corporate LAN connectivity. Belden's 10GX data centre solutions delivered reliable end-to-end components that work together cost-effectively as an integrated system, meeting all of Johnson Controls data centre requirements.

Workspace Technology has partnered Belden for over four years and has become established one of the UK's leading Certified System Vendors CSV's. The complete cabling solution is supported by Belden's comprehensive 25 Year system warranty.
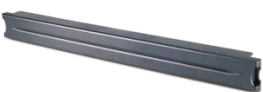
Server Room Design & Build

Space Planning & airflow control

Even with small server rooms the layout and space planning is crucial to the operational functionality and energy efficiency of the room. If mistakes are made during the built stage it becomes impossible to correct once the facility is live.

Workspace Technology are expert at the design of "micro" server room environments and deployed a simple but effective "single aisle" solution for Johnson Controls.

To ensure the efficiency of the server room a cold aisle corridor was created with Workspace Technology's FlexAisle®, airflow containment system. The design detail also included the installation of Koldlok raised floor brush grommets which are specially designed to help seal the floor and prevent leakage of air where cables are routed into equipment cabinets. In addition Workspace Technology installed blanking panels which delivered a simple and effective method to prevent air recirculation within cabinets.

The combined strategy of aisle containment and air re-circulation products virtually eliminates the mixing of hot and cold air within Johnson Controls "micro" server room environment.

Cooling Systems

Workspace Technology installed two Denco Toscana perimeter based close control air conditioning configured in an N+1 resilient configuration. As a direct result of the aisle containment and airflow control strategy the AC system efficiency and lifespan of equipment has be increased, and as a result ongoing operational and system life costs have been reduced for Johnson Controls.

Fire Suppression

The function of the new server room was critical to the production process for Johnson Controls.

Workspace Technology recommended and deployed an FM200 fire suppression which offered the best protection against fire and inevitably downtime. The extinguishing gas works primarily by physically absorbing heat so that the temperature of the flame falls to a point below which it cannot spread. It does not displace oxygen which makes it safe for use in occupied areas.

UPS Systems & Critical Power

When installing a new server room, a capable UPS is extremely important. Johnson Controls knew how integral an effective UPS is and Workspace Technology recommended Power Tecniques Kasar 3 rack mounted Uninterruptible Power Supply system.

The Kasar 3 UPS provides maximum protection for critical data, network and security applications. The advanced design incorporates IGBT technology which helps increase system efficiency to <98% when in "Economy Mode":

Critical power distribution is supported by dual perimeter PDU's and independent "A" and "B" 32A commando sockets to each equipment rack

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Environmental Monitoring

Workspace Technology knew that with all of the equipment within Johnson Controls server room a high quality threat monitoring solution was a necessity. Workspace Technology recommended APC's Netbotz solution. Netbotz puts the monitoring intelligence at the "edge". Netbotz appliances build an infrastructure allowing customers to monitor various types of physical threats by simply adding additional sensor types. Netbotz appliances are designed to work standalone or in mass when used with an ISX Central monitoring / control systems.

By installing Netbotz V3, Johnson Controls are insuring they are able to monitor all of the possible areas of threat from one simple place. This reduces cost of separate equipment and improves the reliability of threat detection within the server room.

Workspace Technology is an APC Elite Data Centre partner with expertise in designing and implementing complex environmental monitoring systems.

Creating the Space -
Connecting with our clients

Workspace Technology's Server Room services offer clients with an important technology building block. By engaging our clients and taking the time to understand the business and performance related issues Workspace Technology is able to deliver a wide range of best of breed solutions.

Technology Building Blocks -
Products and Services

Workspace Technology's portfolio of products and services provides a holistic approach to the design and installation of workspace "technostructures". This one-stop approach for the provision of workspace technology requirements is applied to office, manufacturing and server room environments.

Our product offering is packaged into a number of technology building blocks:-

- ■ Server Room Solutions: undertakes a turnkey approach to design and implementation of server and communications room environments.

- ■ Building Systems: includes the provision of Communications, Power, Security and Cooling systems.

- ■ I.T cabling: offers a structured approach to cabling systems for the distribution of high-speed voice, data and video.

- ■ Technology: provides best of breed IP network solutions for voice, data and multi-service networks incorporating wireless technology solutions.