



## **Siemon brings material benefits to the National Composites Centre**

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**The National Composites Centre (NCC) is home to a variety of companies developing technologies for composite products. When it needed a state-of-the-art network infrastructure to help achieve its energy efficiency objectives it called on Siemon to configure the perfect solution.**

When The National Composites Centre (NCC) opened in summer 2011 it marked the fruition of a project that began 20 months earlier with the publication of the government's UK Composites Strategy and has resulted in one of the UK's most energy efficient research establishments.

### **Product analysis**

Composites are created by combining two or more materials to make a new one with better properties. They are often used as a way to reduce carbon emissions in products. Peter Chivers, the NCC's chief executive, explains, "Put simply, composites are lighter than metals and are useful in any situation which involves making products that move. Saving weight means using less energy and less energy means lower CO<sub>2</sub> emissions and a reduction in the operating costs."

The University of Bristol was selected to host the NCC and took the decision to locate it at SPark – the Bristol and Bath Science Park. Work began on the £25m 8500m<sup>2</sup> building in August 2010 and was completed less than one year later. It comprises two floors and although there are currently just over 60 people working there, when it reaches capacity it will hold 212.



## **Green thinking**

One of the primary construction objectives was to use the latest energy efficient systems and renewable technologies. The building was constructed to a ‘BREEAM Excellent’ environmental rating, and is one of the first industrial buildings in the UK to achieve this prestigious environmental standard.

When it came to selecting a network cabling infrastructure, Martin Conway, the information systems and computing manager at University of Bristol, wanted a best-in-class solution, which Siemon’s ConvergeIT intelligent building infrastructure design fully supports.. He comments, “The converged IP network carries all of the data for the facility and forms the backbone of our building management system (BMS). After undertaking extensive research, we were very impressed with Siemon’s range of products, particularly its shielded options.”

## **Max factor**

Martin and his team wanted a category 6A solution that exceeded current standards and would enable the network to be future proof. In order to protect against interference in the electrically “noisy” large-scale research environment, having a shielded solution was considered necessary.

Siemon’s Z-MAX 6A shielded fitted the bill and the company’s account manager on the NCC project, Richard Fowler, comments, “Z-MAX 6A represents the cutting edge of category 6A cabling by combining superb performance and unparalleled usability with security and robust noise immunity. The shielded system provides the highest margins on all TIA and ISO performance requirements for category 6A/class EA, including critical alien crosstalk parameters.”

## **Speed test**

It wasn’t just its technical excellence that made Z-MAX 6A the preferred option. Martin Conway states, ‘This building was erected in a matter of months and for every aspect of the construction process time was a significant issue.’



Due its innovative design, Z-MAX 6A offers significantly reduced installation times when used in conjunction with the Z-TOOL. In fact, this combination means outlets can be terminated in as little as 60 seconds resulting in fast completion and reducing labour time and costs.

A total of 1,560 ports of Category 6A F/UTP were installed together with an OM3 fibre optic backbone, all of which was fed through to a dedicated data centre. The entire cabling installation was completed in just three months by the Siemon certified installer and is therefore backed by a 20-year systems warranty.

The benefits to the NCC of having such a high bandwidth network are brought into sharp focus when the large quantities of data that will be transmitted over it are considered. It is expected that 10 terabytes of data will typically be produced during a six month research programme in the centre.

### **Efficiency drive**

Converging all the building's communications functions - including VoIP, data and a BMS - onto a single structured cabling network saved the considerable capital cost of deploying multiple, disparate networks. And the BMS now allows the NCC to obtain greater visibility and control of its energy use.

Implementing a BMS in a new build such as the NCC represents less than one per cent of the total expenditure and, according to CIBSE (The Chartered Institution of Building Services Engineers), energy savings of 10-20 per cent can be achieved when compared with controlling each aspect of a building's infrastructure separately.

Martin Conway explains, "On a single converged structured network, our system can monitor heating, ventilation, air conditioning (HVAC), CCTV, access control, security, windows and lighting. It detects the temperature in offices and acts automatically to open windows and activate heating or air conditioning when necessary. The BMS also controls the lighting depending on the available natural light and adjusts it accordingly to ensure constant conditions are maintained."



## **The way forward**

With the first residents already moved in there are many more scheduled to follow over the next few months. Peter Chivers concludes, "The UK now has a research centre that leads the way in its field and will offer huge benefits for industry and consumers. Our communications infrastructure is the lifeblood of the NCC and Siemon's technology, help and advice played a vital part in helping us to achieve our environmental objectives."

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## **About Siemon's ConvergeIT Intelligent Building Infrastructure**

ConvergeIT is an intelligent building cabling method that supports the convergence of all low-voltage building systems onto one integrated Siemon copper twisted-pair or optical fiber structured cabling network. ConvergeIT supports the following low-voltage application types:

- Voice & Data
- A/V (Audio & Video)
- Energy Management
- Lighting Controls
- Security
- Fire/Safety
- HVAC
- Wireless Devices

## ***About Siemon***

Established in 1903, Siemon is an industry leader specialising in the manufacture and innovation of high quality, high-performance copper and optical fibre network cabling solutions. With offices and partners throughout the world, Siemon offers a global service and



has a reputation for delivering market leading performance with systems that maximise efficiency and return on investment.

Siemon's products include the most comprehensive suite of copper available, in both unshielded and shielded twisted-pair, for category 5e, category 6 (Class E), category 6A (Class E<sub>A</sub>) and category 7/7<sub>A</sub> (Class F/F<sub>A</sub>) standards performance. The company's optical fibre range includes both multimode and singlemode cabling systems. In addition to cabling systems, the company has developed specific and specialised products for network provision in both enterprise and hosted data centre environments, often partnering with other global industry leaders in delivery of complete solutions for these markets. With over 400 patents specific to structured cabling, Siemon Labs invests heavily in R&D and development of industry standards, underlining the company's long-term commitment to its customers and the industry.

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