

driving island business life

- power continuity on Guernsey

It's been a busy time for Cable & Wireless in the Channel Islands as the telecommunications company recently quadrupled its Guernsey operations.

Sure, the trading name for Cable & Wireless in the Channel Islands & Isle of Man, is an important contributor to the island's economy, with a growing percentage of revenue being generated from overseas hosting business and Cable & Wireless systems behind some of the world's largest and fastest-growing online companies.

The business covers many customers, including telcos, carriers, service providers, large corporates and consumers. It's an increasingly competitive marketplace where nimble, robust and yet flexible infrastructure, continuous uptime and reliable uninterruptible power protection can mean the difference between success and failure.

Three New Hosting Centres

At the heart of Cable & Wireless' expansion in Guernsey lie three new data centre hosting facilities, all dependent on a secure supply of electricity and standby power. This is where Secure IT and Riello UPS became involved. The two companies have been tasked with ensuring power continuity for the new facility during the years of growth that lie ahead.

Cable & Wireless' IP/IT Engineering Manager Rik Toms is responsible for the company's IT and Internet systems infrastructure on the island:

"It's not just that we need continuous uptime from our computer and business systems," he explains. "As providers of secure hosting, our customers rely on our ability to deliver it too. It's a chain reaction – if we go down, they go down and so do their customers."

"We live in an uncertain world. Wherever you look there's risk – not just high-profile terrorist threats, but fire, natural disaster, human error, industrial action and cyber criminals. Any of these could compromise our ability to deliver the high levels of customer service and availability we guarantee to our customers."



■ Master Plus UPS protection at The Cable & Wireless Data Centre (3x200kVA N+1)

New Premises Urgently Needed

For Cable & Wireless, it's imperative that it minimises the long-term damage that power failure can cause to a hard-won reputation and the future prosperity of the business – to say nothing of the physical damage it can do to computer equipment.

As the project went ahead, the first challenge was the acquisition, development and equipping of suitable premises, for existing requirements and future growth.

Though renowned as a holiday destination, Guernsey is less well known for its high-profile redevelopment projects. For an expanding business like Cable & Wireless, acquiring new building land on the island was almost impossible, and development was further hindered by air and sea transport being the only ways to get equipment on and off. With less than three months to build a state-of-the-art data centre, Cable & Wireless chose an existing building which was relatively easy to upgrade, rather than waiting for development land to become available.

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■ PowerBak Generators providing standby power to the Cable & Wireless facility (6x440kVA N+1)

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Compared to this, choosing a suitable supplier to refurbish and secure the new building was a relatively easy decision. The successful contractor, Secure IT, already enjoyed a superb reputation for offshore secure data centre construction, including secure computer rooms that are fully-shielded modular environments providing protection and continued operational capability in the face of a wide range of physical threats. Secure IT's portfolio includes work for clients as diverse as Formula One teams and major healthcare facilities.

Meeting Power and Cost Needs

With its building acquired and the conversion underway, it was time for Cable & Wireless to specify and install the UPS equipment. The decision to appoint Riello for this was another easy one given the company's familiarity with Riello service, reliability and innovation.

The facility's first level of power continuity protection actually comes from Guernsey's dual electricity supply, 65 per cent of which originates in a nuclear power station in France, with the rest being provided by Guernsey Electricity's own oil-fired power station.

A second-line of protection comes from Cable & Wireless' four 440kVA, one 600kVA and one 1MVA standby generators. A highly resilient UPS solution was needed, giving maximum possible power with a small footprint to free space for more revenue-earning server racks. And, as ever, overall capital cost was another key factor. A two-unit (2 x 400kVA) Parallel-Redundant System and a three-unit (3 x 200kVA) Parallel-Redundant (N+1) System were both considered for the installation.

Throughout the project, Riello's consultative approach added value by helping Cable & Wireless to refine its specification (based on supplying 70 20A racks) within best practice standards. Eventually, the Parallel-Redundant (N+1) option was adopted for its ability to meet the project objectives – including an estimated 35 per cent increase in available rack space and optimum resilience. Another advantage was the way it balances power capability with the avoidance of expensive over-specification and a greater need for power-hungry air-conditioning. On a Great British Pounds-per-kVA basis, the solution was an obvious winner – as well as adhering to Riello's proven philosophy of uncomplicated system design for long-term reliability and ease of use.

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■ The Master Plus front panel provides easy access to operating status information

“With the N+1 solution, the UPS units can share the load; and if one goes down, the other two can still cope – it’s pretty much fail-safe,” Rik Toms explained.

Completion In A Record 77 days

The UPS bridges the gap between a mains power failure and generator start-up. This is achieved using a battery set capable of running for 20 minutes. Another lesser-known function (but increasingly more important) characteristic of a modern UPS is that it continuously filters and conditions the voltage, keeping it to within specified levels to maximise performance and minimise equipment wear-and-tear in the face of the power sags, surges, brownouts and fluctuations that can damage hardware and cause data loss or corruption – particularly in a highly equipped environment.

Work started mid-summer in 2007, with a commitment that all facilities would be on-line by November. In fact, the project was completed in just 77 days thanks to meticulous planning and out-of-hours working – even in the face of a lack of accommodation for the installation teams during the peak summer period, and the need to ship vast amounts of equipment to and from Guernsey.

Whilst warehouse site clearance was under way, new power supplies and transformer installs were being completed ready for cell construction and infrastructure fit out. With an enlarged project management team dealing with such diverse activities as trenching, generator base construction and constant materials offloading (all within the tightest time constraints), there was no time for relaxing beach visits. The hard work paid-off when, despite numerous power and cabling upgrades to meet the performance demands of the latest hardware releases, the three data centres were completed on target.

Reduced Capital and Operational Costs

The total UPS installation consists of eight 160kVA and three 200kVA transformer-based Master Plus UPS, working in continuous true online mode. Because the installation was designed to maximise power supply, whilst minimising power and costly cooling requirements and cutting the facility’s carbon footprint, it is also as green a solution as possible.

The Riello UPS Master Plus, a proven favourite for advanced data centre applications, offers unprecedented power protection, energy efficiency and built-in intelligence.

For infrastructure managers like Rik Toms, Master Plus gives reduced capital and operational costs while meeting compliance issues and maximising reliability. As always with Riello solutions, sophisticated configuration options and remote monitoring capability (Riello’s acclaimed TeleNetGuard) has added further value.

Freeing-up Space For Client Racks

Master Plus also has a small footprint (its smallest configuration is only 0.64 square metres) – attractive to clients like Cable & Wireless because it frees space so that more revenue-earning client racking can be installed in a given area. UPS protection, however, isn’t just about hardware; the installation’s Riello UPS PowerShield³ software allows the Cable & Wireless team (internally) or Riello (externally) to carry out UPS management. The software displays real-time information in the form of bar charts and values for critical data such as mains voltage, UPS load and battery charge percentage.

For added customer convenience, it also allows remote interrogation of UPS logs and operating parameters to help diagnose alarms and potential fault conditions. PowerShield³ can also be configured to perform an automated safe power-down of protected PCs and file servers, thus protecting equipment and data integrity.

Ride Through Every Interruption

The Riello installation, completed in 77 days and commissioned in October 2007, gives Cable & Wireless exactly the protection a leading international provider needs – and because Riello has helped the company reach the optimum balance between power supply and power requirement, the installation is also pleasingly green to meet today’s burgeoning energy-efficiency standards.

The final word goes to Rik Toms: “UPS’ bridge the gap between mains power failure and generator start-up. Even just a few seconds without power is enough to disable all our equipment. A reliable UPS reassures us that we can ride through pretty much any interruption.”

Secure IT - A Riello UPS Power Partner

Secure IT and Riello UPS have a well-established partnership, forged through several years of delivering high-end power solutions to data centres across the UK. For more information on Secure IT visit www.siteltd.co.uk

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