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Voices of dissent

HOW SHOULD THE DATA CENTRE SECTOR RESPOND TO ENVIRONMENTAL PROTESTORS?

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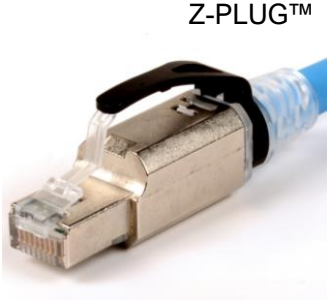

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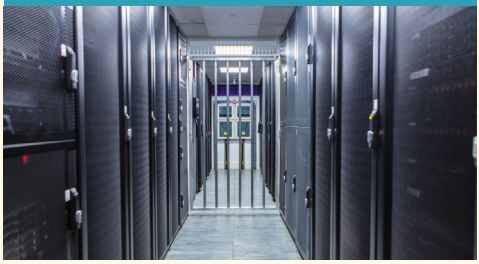

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Protest movement

EDITOR
Rob Shepherd
07708 972170

SUB-EDITOR
Chris Marsland

ADVERTISING MANAGER
Kate Paxton
01603 610265

CREATIVE DIRECTOR
Vishnu Joory

TECHNOLOGY CONSULTANT
James Abrahams

CIRCULATION MANAGER
Debbie King

ACCOUNTS
Billy Gallop

For much of their existence data centres have operated under the radar of the general public. That, however, is beginning to change – and not always in the way in which we would hope.

In November last year environmental campaigners staged a demonstration outside the Data Centres Ireland event in Dublin calling for an end to new data centres being built in the country. This wasn't the first protest of this nature and it certainly won't be the last. To ascertain how serious this is for the future development of the data centre sector, this month's Question Time asks a panel of industry experts to explain how should it respond to these protests.

As digital transformation continues there is increasing need for compute power at the edge. It continues to be a massive industry talking point and Michael Akinla of Panduit looks at the opportunities presented by micro-modular and edge data centres, while Marc Garner of Schneider Electric explains why security, sustainability and resilience are the key factors influencing network infrastructure at the edge.

We also have a special feature dedicated to security and access control, comprising two excellent articles. In the first, Mark Green of LMG identifies the key considerations for selecting security and access control technology in order to create smart and secure buildings. In the second, John Hall of Proximity Data Centres explains why, in the rush to bring data closer to users and customers, it is still as important as ever not to overlook a data centre's security credentials.

It's been great fun putting together a review of the Inside_Networks 2022 Charity Golf Day, which raised over £10,000 for Macmillan Cancer Support. I'd like to say a massive thank you to all those who participated, sponsored and provided raffle prizes, and we'll be doing it all over again in 2023.

With lots more besides, I hope you enjoy this issue of Inside_Networks and if you'd like to comment on any of these subjects, or anything else, I'd be delighted to hear from you.

Rob Shepherd
Editor

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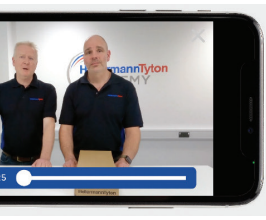

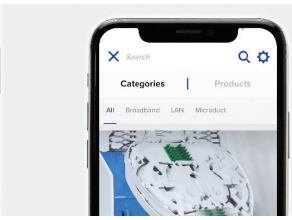

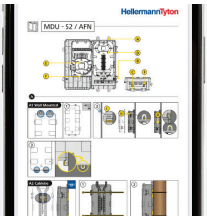

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Uptime Institute's 2022 Outage Analysis finds downtime costs and consequences worsening

The digital infrastructure sector is struggling to achieve a measurable reduction in outage rates and severity, and the financial consequences and overall disruption from outages are steadily increasing. This is according to the Uptime Institute's 2022 Outage Analysis report.


Andy Lawrence

High outage rates haven't changed significantly. One in five organisations report experiencing a serious or severe outage involving significant financial losses, reputational damage, compliance breaches and, in some severe cases, loss of life in the past three years.

Meanwhile, the proportion of outages costing over $100,000 has soared in recent years. Over 60 per cent of failures result in at least $100,000 in total losses – up substantially from 39 per cent in 2019. The share of outages that cost upwards of $1m increased from 11 per cent to 15 per cent over that same period. Power related problems also continue to dog data centre operators. They account for 43 per cent of outages that are classified as significant in causing downtime and financial loss, with the single biggest cause of power incidents uninterruptible power supply (UPS) failures.

The overwhelming majority of human error related outages involve ignored or inadequate procedures. Nearly 40 per cent of organisations have suffered a major outage caused by human error over the past three years. Of these incidents, 85 per cent stem from staff failing to follow procedures or from flaws in the processes and procedures themselves.

Prolonged downtime is becoming more common in publicly reported outages. The gap between the beginning of a major public outage and full recovery has stretched significantly over the last five years. Nearly 30 per cent of these outages in 2021 lasted more than 24 hours – an increase from just eight per cent in 2017.

'Digital infrastructure operators are still struggling to meet the high standards that customers expect and service level agreements demand,' said Andy Lawrence, founding member and executive director at Uptime Institute Intelligence. 'This is despite improving technologies and the industry's strong investment in resiliency and downtime prevention.'

He added, 'The lack of improvement in overall outage rates is partly the result of the immensity of recent investment in digital infrastructure, and all the associated complexity that operators face as they transition to hybrid, distributed architectures. In time, both the technology and operational practices will improve but, at present, outages remain a top concern for customers, investors and regulators. Operators will be best able to meet the challenge with rigorous staff training and operational procedures to mitigate the human error behind many of these failures.'

TIA licenses Capitoline as a TIA-942 certification body

The Telecommunications Industry Association (TIA) has appointed Capitoline as a TIA-942 licensed certification body and training provider. The TIA-942 Certification Program enables data centres to be reviewed and certified for conformity to the requirements of the ANSI/TIA-942 standard, providing greater assurance to customers and stakeholders.


Barry Elliott

Barry Elliott, director at Capitoline, said, 'The program includes a worldwide listing of TIA-942 certified data centres, TIA-942 certified auditors, consultants and companies providing consulting and auditing services, as well as information and training for companies and individuals interested in becoming a certified auditor or consultant. Audit and certification by a qualitied auditor affiliated with and operating under a licensed Conformity Assessment Body (CAB) is required to validate that the design and build of a data centre conforms to the ANSI/TIA-942 standard.'

Cybersecurity professionals are overworked and lacking confidence to stop cyberattacks

The demands placed on cybersecurity professionals struggling to cope with the risks faced by their organisations from cyberattack have been evaluated in a survey of 300 cybersecurity and IT workers in mid-sized organisations in the UK, commissioned by Arctic Wolf. Over a quarter (27 per cent) of survey respondents stated that they do not feel knowledgeable enough as an individual to spot a cyber threat.


Ian McShane

The survey also delved into the work life balance of cybersecurity professionals and their career prospects. 26 per cent of respondents said that their job has a negative impact on their mental health and 56 per cent of respondents said that they believe they would be blamed by management if their organisation experienced a breach.

Ian McShane, vice president of strategy at Arctic Wolf, commented, 'Fewer professionals available for hire means the ones in work are struggling with a significant workload, while the threat landscape continues to be more demanding day by day and year by year. Right at the time when organisations need their cybersecurity experts focused and motivated to protect their organisations from attack, they are clearly at risk of being demotivated and distracted.'

The Barcelona Supercomputing Center and Lenovo announce partnership to advance supercomputing technology

A research agreement has been signed between the Barcelona Supercomputing Center-National Supercomputing Center (BSC-CNS) and Lenovo to advance research in high performance computing. Through this collaboration, Lenovo will invest $7m over three years – the largest amount invested by the company in research within Spain – to advance precision medicine through the use of supercomputing and the creation of more energy sustainable supercomputers and data centres.


Noam Rosen

Noam Rosen, EMEA director high performance computing and artificial intelligence at Lenovo, said, 'Our shared goal is to embrace open architecture to support scientists and researchers with smarter, more efficient and sustainable supercomputing platforms. This agreement, and our investment contribution, are just the latest examples of Lenovo's ongoing commitment to Europe, joining our new manufacturing facility in Hungary and the AI Innovation Center Germany.'

Colt Group launches its first sustainability report

Colt Group has released its first sustainability report, which looks at how the company is delivering a positive impact – both internally and externally – from its environmental, social and governance (ESG) commitments. The report follows standards from the Global Reporting Initiative (GRI) and highlights how the company takes full accountability for its emissions. This includes the company's near-term emissions reduction targets approved by the Science-Based Targets Initiative (SBTi) in 2021.


Keri Gilder

Colt's CEO, Keri Gilder, said, 'Our sustainability commitments are front and centre of how we do business, and this is very much emphasised in the report. While this is the first time Colt has published information of about ESG activity externally, it builds on elements we've already discussed and are core to our business.'

Schneider Electric unveils new research to prepare IT infrastructure for net zero operations

Schneider Electric has released independent research to better understand the maturity of sustainability initiatives within IT and data centre organisations and, more specifically, where the IT and data centre industry stand in achieving this vision of net zero IT operations.


Pankaj Sharma

451 Research, Forrester and Canalys independently collected data from more than 3,000 global participants across many segments and organisation sizes. Findings consistently demonstrate that across the data centre and IT industry there is discrepancy between where companies think they are and implementing full lifecycle sustainability programs across their IT infrastructure.

According to the 451 Research findings, 26 per cent of participants self-identified as having a full lifecycle sustainability program covering all the infrastructure, while only 14 per cent are taking the actions to have implemented the programs. The analysis further identifies 22 per cent as not addressing sustainability as a major focus, though may have efficiency initiatives to improve specific areas of operations.

'We've made some progress but to avoid a major energy challenge, all data centres – including distributed edge data centres – must be more sustainable, efficient, adaptive and resilient,' said Pankaj Sharma, executive vice president Secure Power Division at Schneider Electric. 'The research is clear – the industry knows sustainability needs to be prioritised but challenges still exist in taking action and will take a collaborative effort to overcome. The good news is the technology to take action in sustainability exists today and now is the time to act.'

NEWS IN BRIEF

Giganet is ending its financial year on a high after being crowned Overall Fibre Provider of the Year at the inaugural UK Fibre Awards 2022.

Stonebranch has opened a new technology hub in Skopje, North Macedonia, to help enterprises modernise operations with a mix of automation technology and managed services. Additionally, the technology hub is home to a development lab, which is focused on the creation of automation solutions.

Despite rising ransomware attacks on critical national infrastructure (CNI), 62 per cent of cyber leaders in UK organisations do not have a decision making plan in place on whether to pay the ransom, according to research by Bridewell.

Panasas is collaborating with MLCommons to create industry wide benchmarks for machine learning (ML) storage. Panasas will work with MLCommons to help steer these benchmarks by establishing best practices for measuring ML storage performance.

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Right in front of yo

Hi Rob

The British government's energy security strategy outlined a heavily delayed and much anticipated plan to reach energy independence and net zero carbon. The strategy saw mixed reactions, ranging from praise for its renewed focus on wind power, to shock at its proposals to boost oil and gas as an interim measure while we ramp-up renewable and nuclear generation.

Retrofit, insulation and other energy efficiency measures may not sound as glamorous as wind turbines or nuclear power plants, but these are essential pieces of the energy security puzzle, which have been overlooked and need urgent attention. Unlike long-term projects such as nuclear plants and wind farms, retrofit solutions are available today and can immediately alleviate the energy crisis.

For the long haul to net zero, we need energy flexibility – a mix of low carbon sources and a reduction in energy use. We need short- and medium-term wins to bring the cost of fuel down quickly and decarbonise the grid, rather than large spends on long-term projects that will do little to ease our emissions in the short-term, or provide room to develop new solutions in the future.

Retrofitting requires a holistic understanding of the UK's buildings, crossing over many professions and fields of expertise. The good news is that a lot of work has already been done to map out the retrofit process, through the PAS 2030 and PAS2035 schemes and the creation of BS 40104. However, while the cut in value added tax (VAT) on the upfront cost of energy efficiency measures removes a barrier to entry, it is not the strongest of incentives. What's more, the VAT reduction is available for just five years, until 2027.

Much more work is needed to stir people into action and give them long-

ur eyes

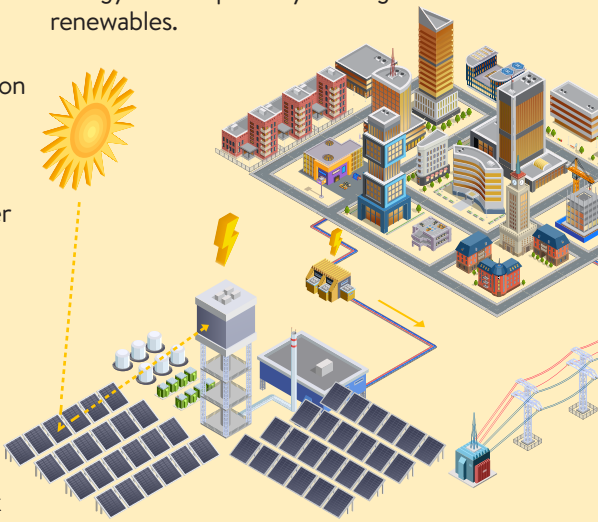
term incentives to install more insulation, solar panels, heat pumps and batteries. The energy crisis is affecting everyone and while we support the government's vision for the future, we urge it to focus efforts on what can be done right now to help reduce energy consumption and cut carbon emissions.

Retrofit must be recognised as the first step on our path to true energy security and net zero. Without it, none of the other proposals in the British energy security strategy can be nearly as effective.

Luke Osborne
Electrical Contractors' Association

Editor's comment

While great progress has been made in making people aware of the need to work towards net zero carbon emissions, a sense of urgency still seems to be lacking. As Luke points out, many buildings, not just in the UK but globally, could make a significant and quick contribution to reducing energy consumption by moving towards renewables.



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Complaints procedure

Climate activists are increasingly turning their attention to data centres and protesting against the development of new facilities. Inside_Networks has assembled a panel of industry experts to suggest what the impact of this could be and how the data centre sector should respond

In November last year environmental campaigners staged a demonstration outside the Data Centres Ireland event in Dublin, calling for an end to new data centres being built in the country. It saw protestors come together to complain that data centres are already taking 11 per cent of total energy from the national grid. Further growth, they said, would be irresponsible and threaten carbon emissions targets.

This wasn't the first protest of its kind. Earlier this year Facebook experienced outcry over its plans to build a data centre in the Netherlands that will use as much electricity as the nation's entire railway system.

The data centre sector has been slow to react, with a distinct lack of messaging coming from industry influencers and trade bodies. So Inside_Networks has assembled a panel of experts to discuss the seriousness of this growing anti-data centre sentiment for the future development of the sector and how should it respond to these types of protests.

Don't forget, if you have a question that you would like answered **CLICK HERE** and we'll do our best to feature it.

JOHN BOOTH
MANAGING DIRECTOR AT CARBON3IT

I was actually present when a small group of protestors disrupted last year's Data Centres Ireland event. They even went as far as triggering the fire alarm to get the delegates outside!

When we reconvened, a few of them had managed to get delegate passes and tried to disrupt proceedings. One well known Irish data centre sector stalwart, as cool as a cucumber, offered the mike and said, 'If you have any questions, I'm sure the audience will be able to tell you all about the measures we're taking to make this industry more energy efficient and sustainable.' The protestor ranted on for a minute or so, then dropped the mike and ran away. The funny thing is that the protest was organised using the very social media he was rallying against!

It would be easy to say that this is going to be a huge problem for the sector but in reality it's not the environmental protestors that are the key concern! The problem is going to be twofold. First is from regulations such as the European Union (EU) taxonomy, where the EU Code of Conduct for Data Centres (Energy Efficiency) is specifically mentioned, and the Securities and Exchange Commission consultation in the US regarding mandatory reporting of GHG Scopes.

The second is 'access to capital' to construct new facilities – basically investors in the various funds that support data centre construction projects globally are implementing sustainability guidelines for all projects. These include mandatory requirements for facilities to use renewable energy, build using sustainable materials, reduce water use etc. Basically, if you want money to build then you are going have to tell the investor how you intend to operate a data centre in a sustainable way, because they don't want to end up with stranded assets – stranded due to energy and carbon taxation.

The sector is also very bad at communicating its sustainability successes. The focus is on technical aspects such as low Power Usage Effectiveness (PUE) and construction materials, and often contains copious amounts of greenwash. It should say 'Look at the wider aspects of green IT, the use of technology that provides data and mitigates energy/carbon elsewhere.'

The threat from environmental protestors may cause some local issues in planning permissions but, at the end of the day, we're talking billions of £/$/€ being invested against some NIMBYs. Ultimately, money talks.

'THE THREAT FROM ENVIRONMENTAL PROTESTORS MAY CAUSE SOME LOCAL ISSUES IN PLANNING PERMISSIONS BUT, AT THE END OF THE DAY, WE'RE TALKING BILLIONS OF £/$/€ BEING INVESTED AGAINST SOME NIMBYS. ULTIMATELY, MONEY TALKS.'

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PATRICK DREW

INSTRUCTOR AND ONLINE TUTOR AT CNET TRAINING

From a sustainability perspective, there is no doubting the impact a data centre can have on a community and the environment.

Sustainability is a key word for all industries and is often broken down into three connected categories – social sustainability, economic sustainability and environmental sustainability. Together, these are known as the three pillars of sustainability.

Social sustainability includes environmental justice, human health, resource security and education. Under the three pillars concept, efforts to promote social sustainability should also aim to foster economic and environmental benefits too.

Economic sustainability means using a set of resources in a responsible way that will allow them to be used on a long-term basis. It means making money and growing the company without negatively impacting the social or environmental elements.

Environmental sustainability focuses on the wellbeing of the environment, water quality, air quality and reduction in greenhouse gas emissions. Human health depends greatly on the quality of the environment, so any efforts to preserve and restore the environment benefit people too.

Is the industry doing everything it can to find balance between the three pillars of sustainability? If we consider the growing voice against data centre builds, the answer to this question has to be no.

We know that giant steps have been taken when it comes to energy efficiency in data centres and using sustainable energy sources to provide a growing percentage of our energy needs. But are we finding balance between the three pillars? Are we considering the impact data centres will have on the local environment or the local community?

Yes, data centres will provide a number of jobs, especially during the construction phase, but does this help the community in the longer-term? Clearly the economic side is working OK – the European market alone is expecting a rapid increase in investment, with almost 2,900MW of power to be installed, the majority by the end of 2024, with revenues increasing by more than 50 per cent by 2026.

Until the data centre sector balances the three pillars, the dissenting voices will grow, the demonstrations will grow and there is a real possibility that this will impact the expected investment and growth in the industry.

> 'IS THE INDUSTRY DOING EVERYTHING IT CAN TO FIND BALANCE BETWEEN THE THREE PILLARS OF SUSTAINABILITY? IF WE CONSIDER THE GROWING VOICE AGAINST DATA CENTRE BUILDS, THE ANSWER TO THIS QUESTION HAS TO BE NO.'

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IAN BITTERLIN

CONSULTING ENGINEER & FORMER VISITING PROFESSOR AT LEEDS UNIVERSITY

Environmentalists have long highlighted data centres as large energy consumers, although some governments are now realising that their climate change ambitions are being scuppered by exponential data traffic growth. This has resulted in moratoriums etc for Amsterdam, Frankfurt, Singapore and Dublin. But there are locations that still try to attract data centres with low carbon low cost energy, notably Sweden and Finland, with a mix of renewable and nuclear.

However, this close attention to data centres may be misdirected? They don't create demand – they respond to it. If one cause is needed it would be ever faster broadband that users are flocking to for streaming video, often via mobile networks, for increasingly internet high definition TV.

With its 10 per cent compound annual growth rate (CAGR) there is no doubt that data centre energy is unsustainable when 45 per cent of the world's population are still without a connection. When they get it will they stream video, or can we get the lid back on Pandora's Box?

The real problem for data centres is the desperation to be seen to be green and renewably powered. There is no reason why they should be, but their purchasing power allows them to be first in the queue. One problem is that wind is intermittent but data centre demand is not – so when the wind doesn't blow data centres are fossil fuelled. When the wind blows hard the excess energy can't be used.

Data centres that purchase renewable energy outside of the country where they are located can be seen as greenwashing. Meanwhile, virtual power purchase agreements (VPPAs) may soon be seen to be part of the problem, not the solution.

As for water, consumption has always been overstated. In the USA aircon systems have long used 'wet' cooling towers, but Europe has concentrated on air cooled chillers. However, the possibility of adiabatic and evaporative technology has been seen as the future of low energy cooling. This appears not to have been commercially successful, due to space requirements rather than water consumption. The withdrawal of a leading manufacturer only demonstrates the difficulty of getting sales. A new solution, adding wet bulb advantages to air cooled chillers, looks like it will have success, so water consumption may yet increase.

> 'THE REAL PROBLEM FOR DATA CENTRES IS THE DESPERATION TO BE SEEN TO BE GREEN AND RENEWABLY POWERED. THERE IS NO REASON WHY THEY SHOULD BE, BUT THEIR PURCHASING POWER ALLOWS THEM TO BE FIRST IN THE QUEUE.'

JON LABAN

RESET CATALYST AT THE OCP FOUNDATION & OPENUK BOARD MEMBER

As the evacuation alarms sounded at the Data Centres Ireland event, over 1,000 attendees were directed from the building on to the front lawn. There they were confronted by protesters holding up purple Extinction Rebellion banners and chanting from the pavement on the other side of the venue railings.

I was curious to understand what their grievances were so I went outside the venue railings to talk with the protesters and spent 20 minutes listening. Only one other conference participant went outside to talk with them and that was Max Schultz from the Sustainable Digital Infrastructure Alliance.

When back inside the conference centre I surveyed those on the inside asking what they thought the protestors' grievances were. I wasn't surprised to discover that there was a complete disconnect of understanding between attendees on the inside and the protestors on the outside. I also asked those on the inside if they were familiar with the logos on the purple banners held by the Extinction Rebellion rebels and, again, there was complete ignorance.

My partner is the senior sustainability planner for the City of London. From the skills I have acquired from her over two decades I have believe that people in the data centre industry have a very narrow definition of sustainability. The experience in Dublin reinforced that belief.

Lack of diversity is a key reason why people in the data centre industry have a narrow definition of sustainability and suffer with inward looking groupthink. This mindset will take time to change, one funeral at a time, and protestors from Extinction Rebellion and other environmental campaigners will only become more frequent.

'LACK OF DIVERSITY IS A KEY REASON WHY PEOPLE IN THE DATA CENTRE INDUSTRY HAVE A NARROW DEFINITION OF SUSTAINABILITY AND SUFFER WITH INWARD LOOKING GROUPTHINK. THIS MINDSET WILL TAKE TIME TO CHANGE, ONE FUNERAL AT A TIME, AND PROTESTORS FROM EXTINCTION REBELLION AND OTHER ENVIRONMENTAL CAMPAIGNERS WILL ONLY BECOME MORE FREQUENT.'

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MARC GARNER

VICE PRESIDENT SECURE POWER DIVISION AT SCHNEIDER ELECTRIC UK&I

It is estimated that data centres consume between 1-2 per cent of global electricity and in Ireland this rises to nearly 11 per cent. Steps have been taken to halt the construction of data centre within the Dublin area due to projected energy demands. What's more, the data centre industry also uses a large amount of water – a 15MW data centre is estimated to use up to 360,000 gallons of water a day.

Over the course of the last decade the sector has made great progress to make data centres more energy efficient and sustainable. Average Power Usage Effectiveness (PUE) ratings have fallen to 1.57, with some operators achieving sustained PUE figures of 1.2 and below.

While great progress has been made, however, far more work remains to be done. Greater transparency and consistency in terms of sustainability reporting will be essential. Metrics, for example, differ between operators but utilising a standardised framework could prove useful in helping the industry adhere to agreed standards, and make actionable progress in addressing key areas such as waste, water, land, biodiversity, greenhouse gasses and energy usage.

With the energy crisis another prevalent issue, many vendors are also designing technologies with energy efficiency as a key priority. Lithium-ion uninterruptible power supplies (UPS), free air and liquid cooling architectures, and DCIM software can allow operators to design, deploy and manage their infrastructures for maximum efficiency.

Looking forward, the adoption of renewables and a means to integrate data centres with grid infrastructure will also prove vital to future developments. Yet, for a truly effective response, the industry must collaborate globally. Many companies have signed up to the Climate Neutral Data Centre Pact, setting ambitious targets to become carbon neutral by 2030, while helping to influence policy and regulation at an international level.

Moreover, the industry, which is the heart of the digital economy, must better communicate how it supports critical business sectors on an international scale. By understanding the role of a data centre within the context of digital transformation, and highlighting the steps that the industry is taking to reduce its environmental impact, we can ensure the longevity of the sector and ensure that sustainability remains a focal point for the future.

'BY UNDERSTANDING THE ROLE OF A DATA CENTRE WITHIN THE CONTEXT OF DIGITAL TRANSFORMATION, AND HIGHLIGHTING THE STEPS THAT THE INDUSTRY IS TAKING TO REDUCE ITS ENVIRONMENTAL IMPACT, WE CAN ENSURE THE LONGEVITY OF THE SECTOR AND ENSURE THAT SUSTAINABILITY REMAINS A FOCAL POINT FOR THE FUTURE.'

STEPHEN BOWES-PHIPPS

SENIOR DIGITAL INFRASTRUCTURE CONSULTANT AT PTS CONSULTING

The massive growth in internet demand is chiefly driven by three things – (inter)connectivity, high bandwidth requirements and high data requirements.

End use applications rely on the internet to drive up data centre capacity, while business paradigms also add additional capacity to offer full redundancy at the infrastructural level. Amazon Web Services (AWS) usually builds out three data centres for each region, Microsoft the same, and large enterprises may end up with dozens of data centres of various sizes through mergers and acquisitions and organic growth. For many enterprises, their focus on business agility and flexibility overlooks driving efficiency in their data centres.

Campaigners, therefore, have a point when they want to halt new construction by questioning if it is really needed? However, most of their ire is directed at cloud and colocation providers – especially in Ireland, which has seen significant data centre growth.

It stands to reason that if enterprises want to consider more efficient hosting models or can't manage their own data centres, then it makes sense to transition to third-party providers who can. Furthermore, once IT services have been moved into third-party data centres, often a transformation and consolidation has taken place, which reduces the IT requirement and therefore lowers the energy footprint.

Digital transformation is a 'good thing'. Studies have shown that the wholesale digitisation of manual processes is more effective (usually), more efficient, and therefore frees-up resources for businesses to thrive and reduces their carbon footprints. Looked at in this way, data centre growth is a positive not a negative.

One may argue that there are plenty of other businesses to target that are wholly inefficient, other than data centres, which since the mid-2000s have been relatively good at reducing their marginal impact on energy use and carbon footprint. But that aside, all data centre operators do need to be more open as to how they are driving up their energy efficiency and managing usage, benchmarking themselves regularly against recognisable green flag bearers such as BREEAM Appendix 4, EU Code of Conduct for Data Centres (Energy Efficiency) and ISO standards such as ISO 14001 and ISO 50001.

'ONE MAY ARGUE THAT THERE ARE PLENTY OF OTHER BUSINESSES TO TARGET THAT ARE WHOLLY INEFFICIENT, OTHER THAN DATA CENTRES, WHICH SINCE THE MID-2000S HAVE BEEN RELATIVELY GOOD AT REDUCING THEIR MARGINAL IMPACT ON ENERGY USE AND CARBON FOOTPRINT.'

Seamless Connectivity for **BETTER NETWORKS**

With more than three decades of experience delivering enterprise network solutions for some of the largest organizations in the world, Molex Structured Cabling delivers maximum performance, efficiency and reliability, backed by a 25-year warranty.

- UTP, STP and FTP Category cabling products for reliable, cost effective performance for a wide range of applications, including Power over Ethernet
- Future-ready optical fibre, from cross-campus backbone cabling to high density data centre solutions to superfast fibre-to-the-desk
- Industry-leading 25-year system performance and application assurance warranty*
- Global network of distributors, installers, sales and technical support

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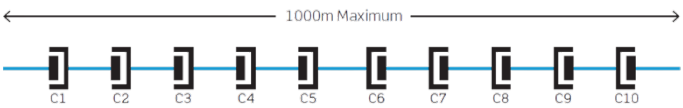
molex

creating connections for life

Is your tester ready and able to Single Pair Ethernet?

Available exclusively through Mayflex in the UK, AEM is a global leader in test and provides a range of award winning devices including its TestPro range, which can



Demand for the internet of things (IoT) is predicted to grow substantially post-pandemic. After all, we all want safer workspaces that encourage employees to return to the office, where we can monitor the working environment. IoT devices and sensors will help with this, as buildings are now starting to become truly smart/intelligent. The problem is how these sensors will communicate – many will use Wi-Fi or 5G networks, which present their own problems.

How can we design cost effective networks for these applications now and in the future?

Surprisingly, one solution when it comes to deploying more IoT devices is reliable and cost effective and has been around for some time – Single Pair Ethernet (SPE). SPE has been used in the automotive industry for years and is readily available.

Why will SPE be so important?

SPE is simply a cable with 1-pair instead of the 4-pair cables we have been installing for over 20 years. Leading manufacturers in Europe and North America are already producing SPE cabling systems that provide significant advantages – reduced installation costs and the ability to run up to 10 devices from one cable, providing power simultaneously.

One of the problems with large sensor deployments is how to power them up. The sensors designed for Wi-Fi and 5G networks invariably use battery power. Replacing batteries will become a significant headache for maintenance crews in the future. Depending on how they are disposed of, it will prove costly and potentially be bad for the environment. Applications that can benefit from SPE include power over Ethernet (PoE) lighting, as using an SPE cabling system will substantially reduce installation costs.

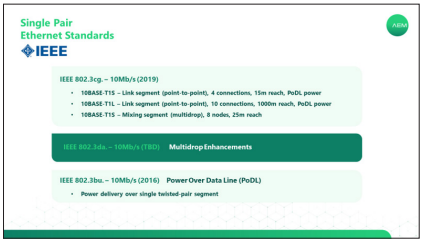
SPE will also dramatically reduce future operating costs for smart/intelligent buildings, as there will be no need for battery replacement.

o test

AEM MAYFLEX A Sonepar Company

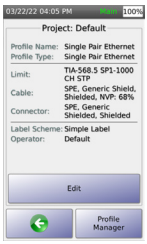
l measurement solutions and test Single Pair Ethernet (SPE)

SPE is not new – and there are already IEEE standards for it!



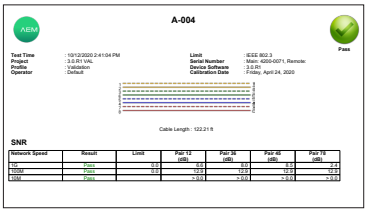
Testing and certification of SPE cable installations

There are a few technical challenges associated with testing SPE links. One involves the length of cable runs, which can be up to 1,000m, and how attenuation or insertion loss causes the signal to degenerate.



Field testers comprise a main and a remote unit for certification testing. Over a long single pair device under test, it is a challenge to communicate data between the two units in order to coordinate the testing, set the parameters, align the test sequencing and exchange the results.

In addition, test limits are different for SPE compared to 4-pair cabling performance testing. The RF parameters for SPE cabling are defined from 0.1MHz upwards, unlike the 4-pair cabling systems where these parameters are defined only from 1.0MHz.



Questions and answers

To ensure you are equipped to take advantage of the many opportunities that smart/intelligent buildings can provide, you need to check whether your current tester can perform SPE testing. Is your current tester ready to test SPE – a ratified standard?

All the testers within the AEM TestPro range can carry out SPE testing. Can your tester do this?

Get in touch

If you don't already deal with Mayflex, you can easily **CLICK HERE** to open an account.

For more information about AEM from Mayflex **CLICK HERE,** call our sales team on 0800 757565 or **CLICK HERE** to send an email.

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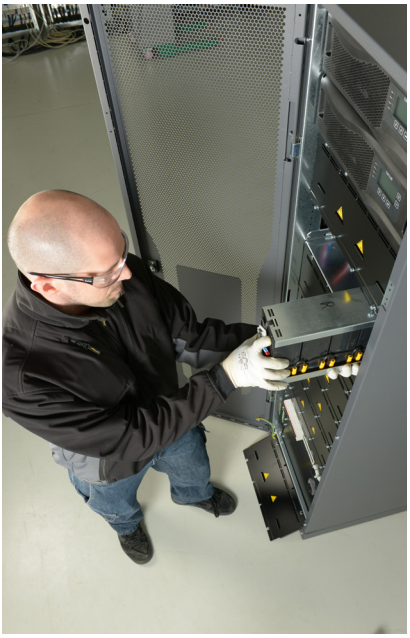
Achieving the highest possible level of power availability with Centiel's CumulusPower



Ensuring a continuous supply of clean power is vital in critical environments such as hospitals, data centres and commercial institutions. Even the shortest interruption could cause significant damage to equipment, financial losses or even endanger lives. An uninterruptible power supply (UPS) system is used to provide power when the main source is interrupted, or even fails, and it also ensures a high level of power quality. Therefore, installing a UPS that offers the highest level of availability is of paramount importance.

Over the years, technological advances in architecture have increased the levels of availability that UPS systems offer. The fourth generation of the true modular UPS CumulusPower, designed and manufactured by Centiel, now provides the highest level of availability on the market (nine nines). This means that the risk of downtime is reduced significantly. To put this into perspective, the third generation of modular UPS and most commonly used architectures offer only six nines availability, which represents seconds of downtime per year. CumulusPower has now reduced this to milliseconds.

Centiel's true modular UPS CumulusPower also offers increased levels of flexibility. This enables organisations to adopt a pay as you go approach and ensuring continuous rightsizing to minimise energy usage and running costs, reducing overall total cost of ownership (TCO).

Uniquely, CumulusPower also offers safe hot-swap capability. This means a module being added to a system can be fully isolated and tested within a running frame before it accepts any load. It also mitigates the risk of human error to ensure the module exchange is completed safely. CumulusPower's Distributed Active Redundant Architecture (DARA) makes the safe hot-swap possible. Without it, any issue with a module going into a live system could have catastrophic consequences and the load could be lost.

CumulusPower also reduces TCO through high double conversion efficiency of →97.1 per cent. As a result, CumulusPower provides the highest level of availability possible and is currently the safest, most reliable and flexible UPS available for critical power protection.

CLICK HERE for further information about Centiel's full range of Swiss quality UPS systems and maintenance options.

www.centiel.co.uk

Schneider Electric, Stratus and Avnet Integrated join forces to deliver the next evolution of the edge

Schneider Electric is partnering with Stratus Technologies and Avnet Integrated to deliver simplified, zero touch edge computing data centres powering the next wave of industrial innovation. The prefabricated micro data centre modules are pre-engineered and factory assembled to customer requirements by Avnet, which offers a one stop shop for end customers, system integrators and operational technology (OT) distributors to order a complete, integrated, turnkey solution as a single purchase.


Rob McKernan

Combining always on fault tolerance, an uninterruptible power supply, and cybersecurity protection, the EcoStruxure Micro Data Center with the Stratus ftServer is a powerful, quick and efficient deployment built to meet the demands of industrial applications in the era of digital transformation. The EcoStruxure micro data centre is tested, validated and available with pre-loaded software, such as the Aveva system platform.

Rob McKernan, senior vice president Secure Power Europe at Schneider Electric, said, 'At Schneider Electric, we share a vision with Stratus and Avnet, which we believe will help customers transform their industrial operations and reap the benefits of digitalisation. The standardised solutions we have co-developed significantly reduce the complexities associated with deploying critical IT in factory environments, freeing up valuable time and increasing process efficiency for our customers.'

Trend Networks makes key appointments for the UK

Trend Networks has made a number of key additions to its UK team. The new team members bring specific experience that will support the company's continued growth.

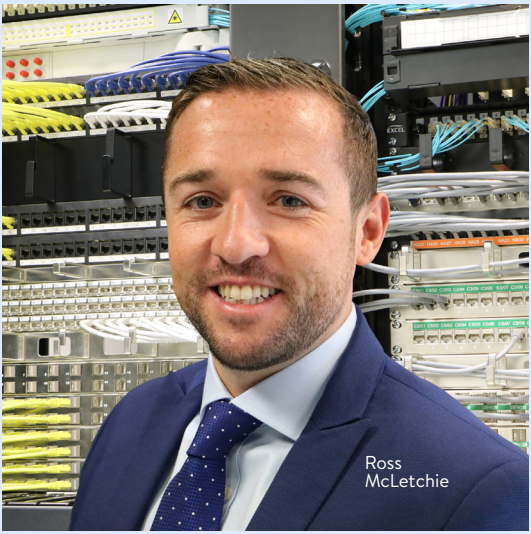
Martin Redhead joins as market intelligence manager, with a focus on understanding customer needs, while the customer service team has expanded with the addition of Sonja Appel, who will look after the French market, and Mark Leonard, who will take care of export market customers. Evan Gargoulakis has joined in a quality assurance (QA) engineer role and Andreas Ganser has been appointed technical support team leader for EMEA. Joining them are Juan Hernandez as technical support sales engineer, Krishna Pradeep as hardware manager and Emil Sawicki as senior software engineer.


Paul Walsh

'To ensure we can deliver the dependable products and service that our customers need, and to support our new product development pipeline, we are investing in our people and expanding our team worldwide,' said Paul Walsh, CEO at Trend Networks.

Mayflex and Wanzl collaborate to help customers keep their premises safe and secure

Mayflex has signed a distribution agreement with Wanzl to distribute its access control systems including interior and exterior security gates and turnstiles. Wanzl provides all the tools that businesses need to carry out their day to day operations and help them realise their maximum trading potential and keep people safe.


Ross McLetchie

Ross McLetchie, Mayflex's sales director, commented, 'We're excited to partner with Wanzl and become a distributor of its access control products. Working with our integrator partners, we are seeing more and more requirements for turnstiles and security gates that can be integrated as part of a total security solution. We are confident that Wanzl can fully support our customers and give them the service that they've come to expect from working with Mayflex.'

Virtus Data Centres names Christina Mertens as vice president business development EMEA

Virtus Data Centres has appointed Christina Mertens as vice president business development EMEA. Reporting to the company's managing director, Darren Watkins, Mertens will lead Virtus' strategy of EMEA data centre expansion and business development in the region, and is tasked with defining and executing go to market strategies including identifying and launching Virtus operations in Europe and seeking acquisition opportunities throughout EMEA.


Christina Mertens

'We are living through a time of accelerated digital transformation,' said Mertens. 'Delivering reliable, resilient and responsible digital infrastructure to customers is mission critical and I'm really proud to be part of a company that has been leading the way in designing and operating cutting edge data centres. I look forward to helping Virtus deliver operational excellence to customers across EMEA.'

Centiel makes further investment in its service sales team with addition of Shane Brailsford

Centiel has appointed Shane Brailsford as area sales manager to further its investment in its service sales team. With over 20 years' experience working in the power industry, he joins Centiel from Finning UK, where he was sales manager for two years.

Louis McGarry, sales and marketing director at Centiel, commented, 'Shane will act as an external manager supporting our existing clients, as well as establishing new business with a focus on service sales. This includes new maintenance contracts, battery replacements, capacitor and fan replacements, decommissioning and the removal of legacy systems that are no longer required. Shane's extensive experience in the critical power industry makes him well placed to provide trusted advice to our customers, working to find the optimal solution for their critical power protection and maintenance contract needs.'

Jignesh Patel joins Proximity Data Centres as business development director


Jignesh Patel

Proximity Data Centres has appointed Jignesh Patel as business development director, with responsibility for enterprise sales and leading the development of strategic hyperscale and alliance partnerships. Patel brings two decades of IT and data centre industry sales experience and joins Proximity from Stellium Data Centres, where he led the development of strategic partnerships for two years, preceded by senior sales roles at Iron Mountain Data Centres and Equinix.

'Bringing data and services closer to the end user has never been more important,' said Patel. 'More organisations are looking for increased reliability, better cost optimisation, more autonomy, lower latency and the ability to innovate while keeping the lights on. These goals now require a much more holistic approach to innovative technologies and the ability to leverage them effectively. Proximity's growing edge data centre network will ensure they have the resilient infrastructure, bandwidth and low latency necessary to do this.'

CHANNEL UPDATE IN BRIEF

Panasas has announced a new global channel strategy with added benefits and incentives to grow sales reach through channel and alliance partners.

Emtelle has appointed Paul MacLaurin as its new chief operating officer. MacLaurin replaces Billy Rae, who has moved to a new role as manufacturing technology and business expansion director.

Keysource has appointed Jon White as head of operational services. The appointment is part of a refresh that will see an increased focus on collecting and leveraging data to support the maintenance, operation and management of complex critical environments on behalf of its global clients.

Lenovo has opened the doors to its first in-house manufacturing facility in Europe. Based in Ullo, Hungary, the new factory focuses primarily on building server infrastructure, storage systems and high end PC workstations used by customers throughout the Europe, Middle East and Africa region.

Eaton will expand its collaboration with Microsoft to accelerate applications of its EnergyAware uninterruptible power supply (UPS) technology in key segments worldwide. The expansion is part of a new strategic framework agreement between Eaton and Microsoft designed to address major industry developments including digital transformation, sustainability and energy transition.

Industry icon Valerie Maguire of Siemon retires following more than 30 years of service to the company and industry

Valerie Maguire played a key role in Siemon's customer focused innovation and advancing the industry. With expertise in balanced twisted pair and optical fibre cabling and transmission, she engineered solutions that raised the bar in the performance of 100 ohm balanced twisted pair components in support of growing bandwidth needs.

Her contributions included the integration of printed circuit boards with noise cancellation into outlets, test and qualification methods to ensure consistent patch cord modular plug terminations, and validation of the operation and performance of screened and shielded twisted pair cabling. Her work resulted in the development of ground-breaking standards, test methods and an industry patent.

One of the industry's foremost experts on standards, Valerie previously held positions as global sales engineer and director of standards and technology at Siemon. Here she melded her leadership roles within TIA, ISO/IEC and IEEE standards bodies with her technical expertise to educate the global ICT community and provide support for Siemon's customers.

She was appointed liaison to IEEE 802.3 by the TIA TR-42 Telecommunications Cabling Systems Engineering Committee and held several positions within the TIA-TR-42.7 Copper Cabling Subcommittee. She was also treasurer of the IEEE 802.3 Ethernet Working Group, secretary of the IEEE 802.3 Maintenance Task Force, and editor for multiple IEEE 802.3 Ethernet projects including serving as chief editor of the IEEE Std 802.3cg 10Mb/s Single Pair Ethernet (SPE) project.

'I consider myself extremely fortunate to have been able to dedicate my career to this amazing industry, and contribute to the establishment of standards based digital technologies that are now improving lives and increasing efficiencies around the world.'

Valerie Maguire

Valerie is well known throughout the industry for her ability to explain complex technologies to a wide variety of audiences, often sharing her knowledge at industry events around the world and authoring more than 50 technical articles and papers. She was presented with the Harry J Pfister Award for Excellence in Telecommunications and received the inaugural TIA Top 2% Star Award for her contribution to telecommunications standards development.

John Siemon, chief technology officer and vice president of operations at Siemon, said, 'Every time she was involved in a project it was a positive experience – our customers always walked away from a conversation with Val knowing more and being able to make informed decisions.'

www.siemon.com

SIEMON

Driving force

Marc Garner of Schneider Electric explains why security, sustainability and resilience are the key factors influencing network infrastructure at the edge

As digital transformation continues to sweep through many areas of the world, the IT and communications infrastructure that underpins it all is undergoing a similar transition. Digital services and mission critical applications are being delivered via a hybrid infrastructure ecosystem, with large hyperscale facilities providing the bulk of data storage and archiving services, regional data centres providing localised services, and smaller data centres at the edge of the network deployed close to where data is generated and consumed.

GROWING UP

It is at the edge where much growth in data centre infrastructure is expected to be seen over the next few years. IDC expects that enterprise and service provider spending on edge computing will reach $40bn during 2022 in Europe, and will grow to nearly $64bn by 2025. Other analysts anticipate a similar trajectory for edge infrastructure, with Gartner predicting that by 2025 75 per cent of enterprise generated data will be created and processed outside a traditional centralised data centre or cloud.

Factors driving growth at the edge are diverse but include the desire for organisations to connect all aspects of their operations to provide management with a holistic view of their activity. This allows them to identify new business opportunities, streamline their supply chains, drive performance and profitability, and roll-out innovative new services that drive improved customer experiences.

OUR SURVEY SAYS...

Some insight into the opportunities and challenges that are emerging at the edge were raised in a recent independent research survey by IDC. It polled more than 1,000 IT and operations professionals across several key sectors including industrial, healthcare and education.

The most common reasons influencing

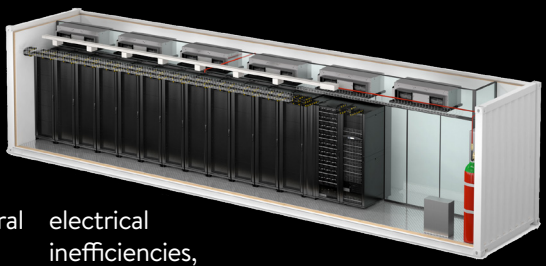
an organisations' use of edge infrastructure were the deployment of local cybersecurity systems, the storing and processing of operational data, and the use of imaging, video or vision based capabilities for security and inspection. Each of these were cited by more than 60 per cent of respondents as being key drivers for edge deployments, while other popular reasons included greater use of process automation systems including robotics and autonomous vehicles.

As to why said companies were investing in edge computing, 50 per cent said it was to improve cybersecurity, with 44 per cent using it to improve systems resiliency and reliability. 40 per cent of respondents stated their investments were to improve the customer experience, while 35 per cent said it was to reduce the volume of data they send to the cloud for cost savings.

MAKING A MOVE

Challenges facing the move to the edge encompass technical, managerial and environmental issues. In the IDC research, the most common response to the question about the major inhibitors to investment at the edge was concern about managing edge infrastructure at scale. Other areas highlighted were securing edge infrastructure, finding secure locations in which to place computing capacity, ensuring adequate power supply, and a lack of skills throughout the entire edge value chain from design through to implementation and ongoing maintenance.

These concerns are, in fact, based on solid foundations. The issues experienced by edge users included slow or non-existent connectivity at remote locations,



utility power outages or power surges lasting longer than 60 seconds. Others experienced delays in servicing or maintaining equipment, damage caused by dust or humid environments, and natural disasters impacting the area where edge data centres were installed.

STRATEGIC POSITIONING

A strategy to ensure successful deployments of edge infrastructure must address each of these concerns from technology and operational perspectives. Fortunately, for many, the ability to do so is already available.

Connectivity options are continually improving thanks to ongoing investments in optical fibre and next generation technologies such as 5G. Power, or renewable energy generation, is another area receiving attention because of concerns around the energy crisis and the impact of fossil fuels on the environment, which are widely reflected in the data centre industry. For instance, 82 per cent of IDC survey respondents cited sustainability as a key selection criterion for edge solution providers.

A commitment to powering data centres with renewable energy sources, a focus on circular economy strategies and the deployment of technologies to make use of battery storage can help to alleviate power issues and reduce the industry's electrical footprint. Further, to combat design and electrical inefficiencies, edge data centres should be designed for a specific Power Usage Effectiveness (PUE) rating and utilise power, cooling and IT technologies that offer the user significant benefits in terms of energy efficiency and resilience. Greater standardisation and pre-integrated designs can ensure that edge data centres are deployed with minimal environmental impact.

'IDC expects that enterprise and service provider spending on edge computing will reach $40bn during 2022 in Europe, and will grow to nearly $64bn by 2025.'

MONITOR AND MANAGE

The ongoing management of edge infrastructure at scale will require users to ensure edge resources are equipped with real time remote monitoring and management solutions. Next, optimum uptime must be ensured, meaning that power availability and security issues – both physical and cyber – must be addressed. Finally, the site must be managed so that ongoing maintenance, performance and upgrades can all be performed both quickly and efficiently.

Modular components including servers, storage, power supplies, networking equipment and racks provide the best means of integrating and deploying edge technologies with the reassurance of interoperability and reliability. Increasingly, IT and infrastructure vendors are providing highly integrated, preconfigured and factory tested edge solutions that can be deployed rapidly in a plug and play format.

Reference designs can also be utilised, where lessons learned

from implementing edge data centres in particularly challenging environments such as ruggedised applications in harsh locations, or those with space constraints, can be applied to ensure greater uptime, efficiency and reliability.

SAFE FROM HARM

Security issues can be addressed via carefully designed procedures, supported with software solutions that limit access only to authorised personnel. Power continuity can be addressed by using an uninterruptible power supply (UPS) solution appropriate to a site's needs. If continuous uptime is required, a defence based on a fully redundant 2N UPS configuration may be required. For less critical applications, an N+1 arrangement may also suffice.

Cloud based data centre infrastructure management (DCIM) software platforms can also streamline management processes, allowing multiple distributed sites to be managed from a single centralised console in real time. This not only allows routine maintenance and troubleshooting to be managed efficiently, but enables technical maintenance personnel to proactively address business critical issues as and when their services are required.

SKILLS SHORTAGES AND SECURITY

Skills shortages can also be addressed through collaboration with partners or third-party service providers. Concentrating skills in the hands of specialists who can be deployed remotely, as and when they are needed, helps alleviate many of the challenges identified by respondents to the IDC survey.

Fortunately, the service sector is responding with a variety of offerings for companies keen to deploy edge technologies. Already, half of respondents used service providers to maintain systems security with patches and software updates, and others opting for their infrastructure to be monitored as a managed service. This included design and installation services, migrations to new systems and a growing number of sophisticated offerings such as end to end management of all edge operations.

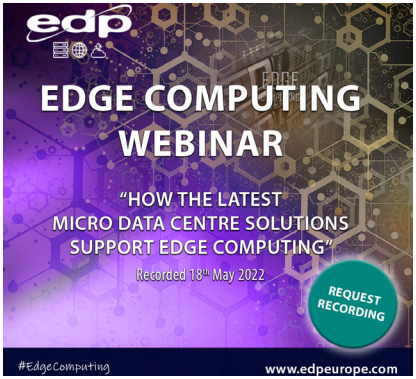
MEETING THE NEED

Edge data centres may typically require major customisation to meet the challenges presented by today's digital applications. Fortunately, leveraging the experience of equipment vendors, the expertise of systems integrators and ongoing support from service providers can allow businesses to deploy edge solutions reliably, cost effectively and with minimal environmental impact. ■

MARC GARNER

Marc Garner is vice president of Schneider Electric's Secure Power Division in the UK and Ireland. He is responsible for leading a team of expert power professionals to support customers in data centres, server rooms, edge computing and mission critical environments. Garner is a 15 year veteran of Schneider Electric and has worked in sales, marketing and leadership roles.

EDP Europe



Adoption of cloud services, along with the growth of the internet of things (IoT), continues to increase data traffic between centralised data centres, data sources and consumers. This data growth continues to push network bandwidth to its limits, reducing processing speeds due to increased latency.

Edge computing provides a solution by bringing the points from which data originates, is processed, stored or consumed closer together. EDP Europe recently hosted a webinar that explored the role micro data centres play in edge computing. Covering a brief history, why edge computing in 2022 is so important, the challenges it presents and the range of MDC solutions EDP Europe offers, it also looked at how they can be deployed and the benefits they provide.

For localised computing to succeed, getting the infrastructure right is vital. A recording of the webinar is available on request to learn more. **CLICK HERE** to access the webinar, call our sales team on 01376 501337 or **CLICK HERE** to send us an email.

www.edpeurope.com

Schneider Electric

Schneider Electric has launched its new Easy Modular Data Center All-in-One Solution in Europe. Available in four standardised form factors with additional configurable options, the Easy Modular Data Center All-in-One Solution combines all power, cooling and IT equipment into a single, pre-configured solution, and provides exceptional value for enterprise and IT organisations looking to implement an edge computing strategy.

All four designs include its Easy Rack, Easy PDU and Easy UPS offerings, are cooled using ultra energy efficient InRow DX cooling systems, and provide enhanced remote monitoring, management and service support via Schneider Electric's EcoStruxure IT Expert data centre infrastructure management (DCIM) software. With its new pre-engineered designs, Schneider Electric can streamline the design and commissioning process, eliminating upfront engineering work, and meet demanding timescales by delivering a high quality, standardised solution with delivery in as little as 12 weeks.

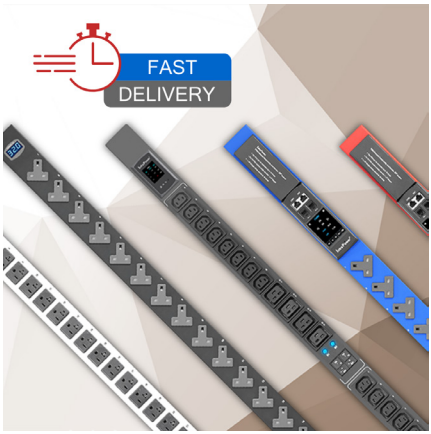
Easy Modular Data Center All-in-One designs range from 5-14 racks, offer power densities between 27kW-94kW and, depending on the customer environment, can be preconfigured within either an ISO20ft or ISO40ft container, or as a 25ft-45ft module.

To find out more **CLICK HERE.**

www.se.com

Austin Hughes

With ongoing industry supply chain issues and in a climate of persistent unpredictability, Austin Hughes can help. An extensive range of Austin Hughes solutions are available from stock or on short lead times.



Enterprise level single phase intelligent, metered and basic rack mounted power distribution units (PDUs) are available in horizontal and vertical mounting versions, multiple outlet configurations (including per PDU), and with a choice of inlet plugs and cable lengths. The InfraPower range also includes three phase rack PDUs, metered and intelligent automatic transfer switches (ATS) and in-line meters.

CyberView rack LCD console drawers, with optional integrated KVM or standalone KVM switches, are also available from stock or with fast delivery options including 4K Ultra HD, Full HD and WUXGA console drawer models. Rackmount solutions are available for when you need them to keep your project on track.

For further information **CLICK HERE.**
www.austin-hughes.com

Secure IT Environments

Secure IT Environments now offers a complete range of micro-modular data centres to suit every application – from under the desk, to edge data centres, industrial and hardened security for unstaffed locations. Our custom designed modules incorporate 19-inch cabinets, cable management, cooling, UPS, power, environmental monitoring and fire suppression – all in a single compact unit.

Secure IT Environments is a leading UK based international design and build data centre specialist, providing edge, micro, modular and containerised secure designs and implementations, as well as a range of services for existing data centres including maintenance and consulting, carried out by our in-house experts.

We have a history of delivering high quality, energy efficient innovative solutions for the NHS, commercial, education, hosting, MoD and retail sectors with professionalism, expertise and excellence. Our professional services cover all aspects of the data centre including site surveys and capacity planning, through to implementation and commissioning.

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Proximity Data Centres' UK network of regional edge colocation data centres meets individual customer requirements – from specific regional data centre services to multi-site rollouts. Proximity's high quality edge data centre network serves major conurbation areas in the North, North West, Midlands, Thames Valley, South West and South Wales from 10 facilities. These will be joined by further UK sites later this year and a total of 20 sites will be available nationwide within the next 12-18 months, reaching 95 per cent of the UK population.

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www.proximitydatacentres.com

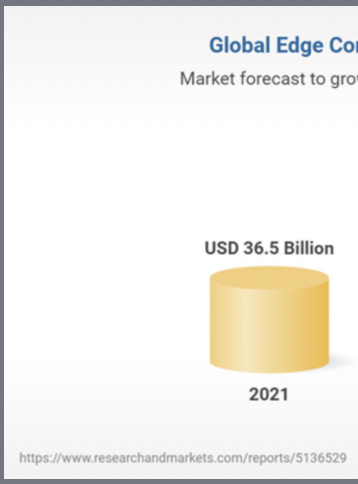
Good things come in small *packages*

Michael Akinla of Panduit looks at the massive opportunities presented by micro-modular and edge data centres

The increasing need for compute power at the edge, located close to the point of data generation and use, is driving the global modular data centre market. According to ResearchandMarkets this market was valued at $36.5bn in 2021 and is expected to reach a value of $87.3bn by 2026 – a compound annual growth rate (CAGR) of 19 per cent during that forecast period. This is not surprising considering that during the coronavirus pandemic there was a massive move towards edge to support the working and living changes we all went through. It is now widely expected that 75 per cent of all data will be processed this way by 2025, demonstrating the opportunity this market offers.

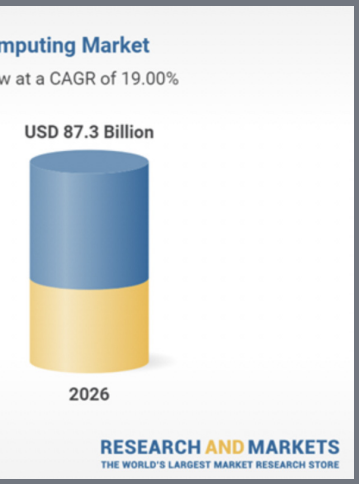
RICH LIST

The growing adoption of data rich applications and internet of things (IoT) technologies closer to users, and more compute and storage capacity to accommodate much higher levels of localised data processing and traffic, requires a different and



in parallel approach to the growth of large scale data centre development. Many industry experts predicted edge would create a slowdown in the growth of large scale data centre development. However, this has been proved wrong by the near 40 per cent CAGR across this sector of the market.

How do organisations go about selecting the infrastructure for micro-modular and edge data centres that meets the compute requirements and helps reduce supply chain challenges? It is probable that the specific application types at the edge will require standard infrastructure configured for those capabilities, for example, intelligent vehicles, advanced medical solutions, retail or mobile telecom, with the modularity for future expansion or change.



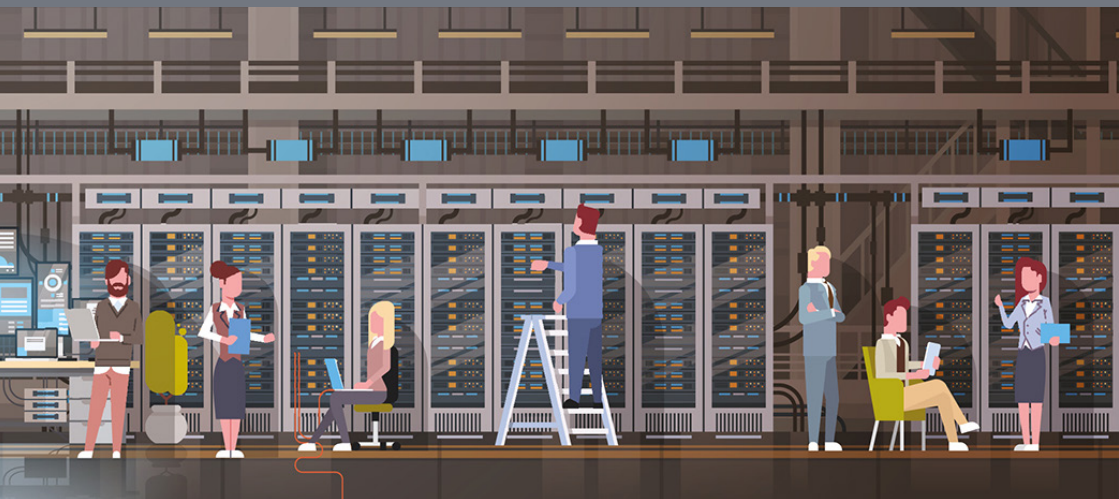
LET THERE BE LIGHT

Remote edge and micro-modular data centres may require locating in sites where lighting constraints require smart thinking, gaining the optimum illumination in and around IT equipment. Panduit previously researched the benefits of white cabinets compared to identical black units. The research found that white cabinets provided a 75 per cent increase in reflected light values (LRV) – white provided an LRV of 80 per cent compared to a LRV of five per cent for black cabinets.

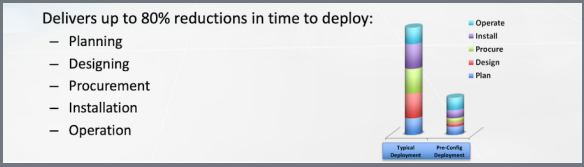
It is estimated that a light energy saving of between 25-30 per cent can be achieved and edge sites could require fewer light fittings, saving cost and energy. Another finding was that the reflective light allowed easier working within the cabinets when moves, adds and changes were required.

TESTING, TESTING...

In today's increasingly complex technology environments IT equipment cabinets can require up to 35 additional products to complete the deployment of each rack.



‘Preconfigured solutions ensure that all the components and subsystems have been tested together to confirm they meet relevant application and environmental parameters before being shipped.’



Untested infrastructure systems with components including cables, a range of live and passive hardware, grounding and blanking plates, each contribute a risk to effective system functionality and speed of deployment once at the site.

Organisations deploying micro-modular and edge compute environments should be evaluating preconfigured cabinet and infrastructure solutions. Suppliers now offer micro-modular and edge single stock keeping unit (SKU) infrastructure subsystems based on customer approved configurations for application specific solutions such as health, retail and telecoms. The configurations provide assessed, tested and optimised infrastructure supporting all the components required for specific market applications.

The ability to provide customers with this capability ensures infrastructure that offers reliable, consistent, high performance results in a reduced technology space. It is estimated that preconfigured infrastructure systems can save up to 80 per cent of on-site deployment time.

Deployment of greater numbers of performance based edge sites will increase the need for sustainability metrics to be recorded, as pressure to increase efficiency across the data centre industry grows. More efficient airflow across hot equipment will positively influence a site’s Power Usage Effectiveness (PUE) rating, or its overall energy efficiency.

VALIDATING CONFIGURATIONS

It is important to optimise the airflow into cabinets and access doors offer up to 80 per cent perforation and provide increased airflow over standard doors, improving energy efficiency. Ensuring the most effective cooling regime for these space constrained sites, where rack densities are increasing, makes the need for effective thermal and device management a paramount requirement. Hotspots, even for short periods, are potentially fatal to active electronic devices.

Preconfigured solutions ensure that all the components and subsystems have been tested together to confirm they meet relevant application and environmental parameters before being shipped. Preconfigured subsystems within edge or as standalone micro-modular installations also reduce customer ordering complexity and often eliminate the need for on-site construction, saving hours of disruption.

Procedures and software tools ensure hardware is tested in a simulated data centre environment to maximise equipment power consumption and heat dissipation. Customers are supplied with key performance data to verify that all equipment operates within expected limits. Utilising air containment and appropriate

air sealing systems within IT equipment cabinets or tech pods within edge and micro-modular data centres can eliminate air mixing and reduce cooling energy use by as much as 40 per cent.

MAXIMISING PERFORMANCE

Automation of operational and environmental data within edge infrastructure is essential, considering the proliferation of sites that are forecast. Environmental management, ease of implementation, device management, documentation and operational reporting, as well as exception/out of bounds management, need to be monitored and data analysed to ensure continuous high performance.

Data centre infrastructure management (DCIM) solutions start with sensors. A robust solution supports a broad range of sensors to provide comprehensive data acquisition. Sensors can be set to flag minor incidents that previously would have been missed, but could indicate potential future problems, such as humidity or temperature spikes.

DCIM is designed to increase automated administration, using tools to reduce unnecessary maintenance and provide online access to authorised users. Automated administrative processes document and deliver consistent results and data, which is essential for remote sites, and minimises training. Furthermore, automating manual tasks offers consistent information that is collected regularly to help calculate PUE or data centre infrastructure efficiency (DCiE).

YOUR FLEXIBLE FRIEND

Highly flexible rack and cabinet systems ensure a specified compute capability is configured in the most efficient and effective layout. High density optical fibre connectivity solutions allow up to 50 per cent higher port density per RU and help manage patch cord density in tight cable pathways. Infrastructure can be designed, preconfigured and preinstalled, along with a customer's compute selection, in off-site clean conditions to ensure maximum quality control. Additionally, factory installed environmental monitoring systems ensure the specified environment is maintained within the container. ■

MICHAEL AKINLA

Michael Akinla leads sales in the UK and Ireland for Panduit's network infrastructure products. He brings 20 years' experience in the deployment of Panduit's most complex solutions and has extensive experience in working with a number of large global accounts to bring about significant improvements in terms of higher bandwidth deployments, reduced PUE and reduced total cost of ownership (TCO).

Back in the swing of things

After a three year absence, the Inside_Networks 2022 Charity Golf Day recently took place at the prestigious Hanbury Manor PGA Championship Course in aid of Macmillan Cancer Support

As we approached Ware the clouds looked ominous – will it or won't it? Apart from a few drops, the rain stayed away and there was a palpable sense of excitement about being able to gather together again after three long years away from Hanbury Manor PGA Championship Course. By the end of a fun-filled, entertaining and laughter packed day, which included by a three-course dinner, prize giving, auction and charity raffle, the Inside_Networks 2022 Charity Golf Day had raised well over £10,000 for Macmillan Cancer Support.

With main sponsorship provided by LMG, Excel Networking Solutions, Mills, ExcelRedstone, Comtec, Slice Golf and Events, and CNet Training, it provided a welcome opportunity for all areas of the industry to network and take part in some good natured competition.

'Despite our best efforts to reschedule the event after the initial lockdown in 2020, the coronavirus pandemic scuppered our plans, so this was the first event for three years,' commented Andrew Stevens, one of the event organisers and CEO of CNet Training. 'However, it didn't take long to feel at home and start enjoying ourselves once again. This time 35 teams and 139 people took part. The generosity of those who sponsored the event and provided prizes was amazing and everyone had a great time.'

The tightly fought Team Competition saw Team Networks Centre emerge victorious, followed closely by Team Anixter 2 as runners-up and Team Curran IT in third place. The day's Best Individual accolade went to Jason Spurr of Team LMG 2, while winner of the Nearest the Pin competition was Jonathan Goodall of Team Splice Group.

This year it was the turn of Stephen Parker of Team Curran IT 2 to take the Longest Drive accolade. PGA golf professional and director of golf for ACE Golf Challenge, Ady Wheatcroft, demonstrated a range of amazing trick shots and hosted a trick shot Beat The Pro competition on the Par 3 11th, which raised £1,130. There were 29 winners and Andrew Stevens of CNet Training was drawn out of the hat as winner.

This year's event saw a number of firsts

WE ARE MACMILLAN. CANCER SUPPORT

Just some of the £10,000 raised

Sign of the times

'LMG is once again proud to be associated with a great day and to be able to help contribute to such a brilliant cause. It has a great atmosphere and is a fantastic opportunity to network with colleagues from across the industry.'
Ieuan Rowe – LMG

Team Mills are all smiles

including a maiden hole-in-one. John Byron of Team Splice Group 'canned' his tee shot on the Par 3 6th. Rather than buy everyone a drink, John made a very generous donation into the charity pot! There was a also an all-female team and the winning team also featured a female player in the form of Caroline Burns.

The traditional Inside_Networks Charity Golf Day prize of a golfing gnome is normally awarded to the individual with the lowest score. However, this year it was given to Tim Hickinbottom for no good reason whatsoever. It was, however, great to see Tim back at this event following his stint in Singapore.

The generosity of sponsors and participants alike was phenomenal and the donated auction prizes from David Bowles of Technical Resources, Ieuan Rowe of LMG and Hanbury Manor raised over £5,000 alone. The traditional game of heads and tails provided moment of collective participation and the winner, in a move that encapsulates the spirit of the day, donated his cash prize back to Macmillan Cancer Support.

Rob Shepherd, editor of Inside_Networks, said, 'The Inside_Networks Charity Golf Day is a highlight of the industry calendar, but this year was exceptional – both in terms of the number of teams participating and the amount of money raised for such a worthwhile and important cause as Macmillan Cancer Support. I'm incredibly proud of our industry for showing such generosity and I would like to extend my thanks to all the players, sponsors and organisers for making the event such a success.'

Liam DeRoe of Macmillan Cancer Support was in attendance and stated, 'We are so grateful to everyone involved in organising and taking part in the Inside_Networks 2022 Charity Golf Day. The event this year was absolutely fantastic and it raised such an amazing amount, on top of everything raised in previous years, so we want to say a huge thank you. The money raised will go such a long way in helping support people living with cancer – emotionally, physically, financially and practically.'

Plans are already underway for the Inside_Networks 2023 Charity Golf Day. Places are sure to be snapped up quickly, so those interested in taking part are advised to register early, as places are limited. To enter a team or get more information about various sponsorship opportunities that are available **CLICK HERE** to email Mark Cumberworth of Slice Golf and Events or call 07769 696976.

The scene is set for dinner and prizegiving

Team Panduit enjoy some light refreshment

'The event is always well organised, the course is great (even if my golf isn't!), and everyone seemed on good form.'
John Marshall - Panduit

Team LMG are in the driving seat

'After a three year gap, we were pleased to attend this fabulous event again. As always, the organisation and course were fantastic. We were also happy that we could play our part in the monies raised for Macmillan Cancer Support. Well done to everyone involved this year, and many thanks indeed.'
Dan Little – J Brand

Not the prize Tim Hickinbottom was hoping for!

Team Networks Centre receive their prizes

The

'A great day, in great company for a great cause!'
Glenn Ward – Dunasfern

Team CurranIT 1 stand to attention

Team Cabling Company get set

A big thanks to all the event sponsors:

excel without compromise.

LMG

COMTEC AN ETC GROUP COMPANY

Tra

'The Inside_Networks Charity Golf Day is a fantastically run event, which I have thoroughly enjoyed being part of. '
Mike Thompson – Edmundson Electrical

Beat The Pro competition on the Par 3 11th

This year's prizes!

'Hats off to everyone who was involved in making the day what it was.'
Mark King – 2bm

'A long awaited but fun day was had at Hanbury Manor. Despite over £2,000 of lessons, Team Mills didn't appear to make any significant advances up the leader board, but we'll be back!'
Jerry Mills – Mills

'Always a great opportunity to catch-up with colleagues and friends, new and old, in a lovely setting.'
Max Daniels – CBRE

More than meets the eye

Mark Green of LMG identifies the key considerations for selecting security and access control technology in order to create smart and secure buildings

When it comes to the lengthy process of installing security and access control systems, there's never been more to consider. These control systems are no longer just about making a building safe and secure – they're also about making a building smart.

FORM AND FUNCTION

Traditional foundational considerations remain prominent, such as security architecture and the operation of physical access points. However, smart buildings run on data and these days one of the best sources of actionable data are security and access control records. That's why many of the chief considerations when installing these is to find systems that are ready to offer up as much valuable data as possible, particularly through integration with other elements of the IT infrastructure.

Once you have the fundamentals set, there are a number of integrations and functionalities you should consider. But first, let's focus on safety and security.

CONTROLLER SECURED

Initially, it's important to decide where the cybersecure controller will be based. As a customer, you will have two choices. Systems installed on proprietary hardware, usually manufactured by the same organisation who developed the software, or open systems based on third-party hardware.

There are good arguments for both types of architecture, which could easily form the basis of a much longer discussion. However, for our purposes here, it's all about your approach to risk. An open system with an open source framework usually has a large

community of users and experts actively checking it for bugs, and you can mix and match software with hardware for best in class set-ups. On the other hand, open source software potentially has bad actors scanning for vulnerabilities to exploit. In any case, the cybersecure controller must be tested and 'hardened'.

CARDS DEALT

The other foundational consideration for security and access control is the strength of your access credentials. It's vital for businesses to source strong credentials that eliminate the risk of cloning – this means steering clear of proximity cards such as Mifare Classic. If cards are to be used, ideally they should be HID SEOS or DESfire EV2 hardware, supporting Advanced Encryption Standard (AES) 128 bit or Triple DES encryption. These are robust standards which make card cloning extremely difficult.

For complete peace of mind with your access control, install an Open Supervised Device Protocol (OSDP) reader. The commonly used Wiegand readers are compromised and can be intercepted to identify credential numbers. OSDP is more secure and provides two-way communication between reader and controller, ensuring maximum security, along with the ability to update the reader firmware quickly when required.

FRICTION ELIMINATED

While card credentials will be sufficient for most businesses, larger corporate entities may want to consider upgrading to a mobile phone credential that removes any shared physical touchpoints from the experience of their workforce, or even their visitors. When access credentials begin to number in the hundreds, it's wise to consider a security and access control system that supports mobile credentials in addition to cards.

One persistent issue with card credentials is that people forget them or lose them. Unsurprisingly, this happens far less often with mobile phones. As the average population of a smart building scales up, the sheer volume of printing, programming, issuing and refreshing cards can become a significant time sink. With mobile credentials, administration can be done electronically and carried out in bulk far more quickly than with their card counterparts. In addition, by expanding the read range of access sensors so that mobiles are detected at distance, the employee and guest experience can be enhanced by eliminating friction and contact points with turnstiles and doors.

ACCESS OCCUPIED

Using mobile credentials to improve the

'When access credentials begin to number in the hundreds, it's wise to consider a security and access control system that supports mobile credentials in addition to cards.'

occupant experience leads neatly on to our smarter considerations. So, in tandem with a visitor management platform, can the access control system report on occupancy at a genuinely granular level?

This is more than a rudimentary site-wide tally of who's in and who's out – individual areas will ideally have their own secure perimeters tracking entry and exit. This creates highly accurate occupancy data, which could then be paired with meeting room or hot desk booking systems. This helps to create a positive and interactive experience for building occupants.

FLEXIBLE FRIEND

Access control is necessarily restrictive, but it doesn't have to feel that way. Beyond frictionless mobile credentials there are several ways it can be used in the service of a seamless user friendly experience.

Consider how occupancy data is presented. Many stakeholders are looking for visual representation, such as a dashboard, that provides top level information in real time – allowing building management to make decisions quickly on matters like occupation density, for example. However, meaningful long-term reporting is also important for monitoring trends over time. This allows for understanding of how a building is being used, which areas can be optimised and where the user experience may be in need of improvement, such as scaling the number of smaller meeting spaces, or hot desks, up or down.

PERIPHERALS ENGAGED

Robust integration with CCTV is another vital consideration and, if executed correctly, allows for validation of much of the reporting data mentioned above. Using CCTV cameras as sensors or using video analytics – in conjunction with access control – turns occupancy data three dimensional. It allows for deeper analysis into how rooms are used by occupants, beyond numbers in a spreadsheet.

Relatedly, integrating with location based services adds another variable to your data pool. You might know that Person A is in the building, but are they using the hot desk they booked? Have they logged

into their laptop using the local network? What resources are they using? Electronic beacons linked into access control can help with location reporting, wayfinding and more. Tracking individual activity within a building, once it has been entered, also acts as a further layer of authentication to ensure a person is using their own access credential.

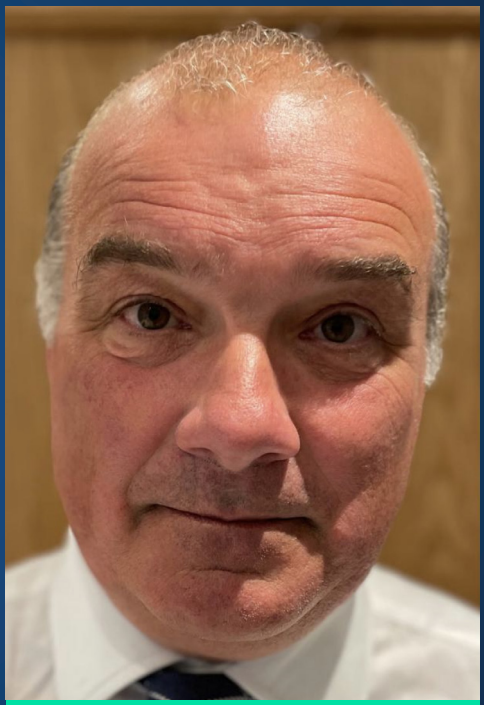
PLATFORM UNIFIED

As a final consideration, many access control systems will integrate with the tech discussed such as visitor management platforms, CCTV, location services and more. But how many of these were designed from the ground-up to work together? How difficult is it to manage third-party integrations? Do those integrations break when access control software is updated?

Linking up disparate elements of a building's IT infrastructure isn't always as straightforward as it ought to be. For that reason it's always worth considering a unified smart building enablement platform. The systems bound together by a unified platform are often made by a single vendor, or take advantage of a formal agreement between manufacturers that keeps software updated and in sync. These platforms tend to add functionality that ad-hoc integrated systems don't have and are generally easier to maintain.

SYSTEMS CONSIDERED

Security and access control is no simple matter. Even when you have physically secured the building, there's a lot to think about in order to get the most out of your systems. This is especially true for smart buildings, where a unified smart building enablement platform is increasingly becoming necessary. What matters above all is to consider each element here, in turn, before executing on any one plan or system. Making a building secure, safe and smart is a rigorous process but one that is always worth the time and effort. ■



MARK GREEN

Mark Green supports the IP security team within LMG including commercial and operational requirements for design and build projects. His previous experience includes working as a project manager at Heathrow Airport, managing the delivery of site security systems at a major international terminal, and overseeing the upgrade of access control systems for Barclays Bank.

Mayflex

Mayflex is the trusted partner for security solutions. We supply IP security and access control products from leading brands including Avigilon, Axis, Hikvision, Milestone, Mobotix, Paxton, Pelco and Suprema, backed-up by excellent service.

The Suprema Mobile Access solution provides employees and visitors with convenient and safe property-wide access by using a smartphone as a key to access doors, facilities and more. By using a smartphone as a credential, managing and using an access card becomes easier, faster and safer. Suprema Mobile Access shortens the card issuance period by directly sending a download link for the app via email.

Mayflex holds large stocks for next day free delivery to the UK mainland and our experienced team can help customers to choose the right products for each requirement. **CLICK HERE** to find out more about why you can trust in Mayflex for all your security and access control requirements.

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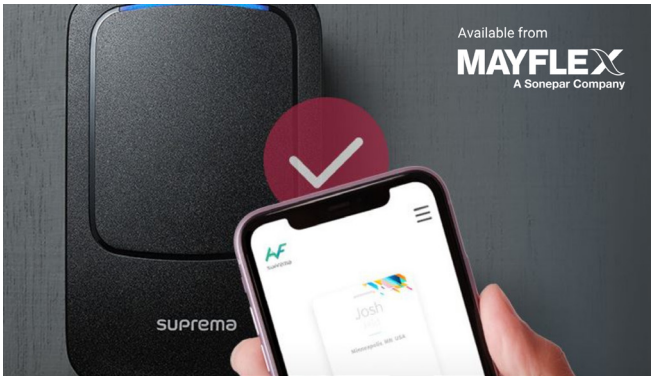
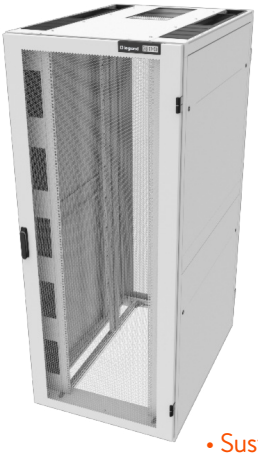


Legrand

Legrand's Nexpand is flexible, sturdy and secure. It provides the scalability and future proof architecture needed to support the rise in digital transitions, internet of things (IoT) connectivity, 5G services, edge computing and artificial intelligence (AI) applications. The Nexpand platform is built on four fundamental values:



- Smart. The cabinet's interior is made to be adjusted in three dimensions, with a completely modular roof. This intelligent design provides more space and flexibility for managing top of rack infrastructure.
- Solid. The new design offers lightweight, solid doors in a frame that easily bears the IT equipment load, with a fully integrated locking and cabling system that is unique to the marketplace.
- Secure. Nexpand provides the highest level of security by interfacing with the most secure electronic door locking platforms.
- Sustainable. The new cabinet is designed to ensure optimal airflow management, resulting in a best in class, energy efficient solution.

To find our more **CLICK HERE.**

www.legrand.us

EDP Europe

Despite increased focus on cybersecurity, protecting data at source within 19-inch racks often gets overlooked. At best it relies on key management – entrusting human diligence and honesty. However, with keys from standard locks capable of unlocking similar racks within the same room or row, the efficacy of this level of security is questionable.

Available from EDP Europe, TZ Centurion is a cost effective, easy to retrofit solution that is compatible with most racks. It provides micro-protection electronic locking with real time monitoring, and reporting right down to cabinet door level. It also offers a proactive solution to physical security at asset level, providing a complete audit trail that meets corporate and governmental compliance requirements. You know who accessed your racks and when.

TZ Centurion enables racks to be accessed via remote trigger, radio frequency identification system (RFID) or can incorporate biometric readers. TZ SlideHandles use a traffic light system to display the locking status of each rack, making it easier to identify racks that are unlocked.

CLICK HERE to find out more, call our sales team on 01376 501337 or **CLICK HERE** to send us an email.
www.edpeurope.com

Austin Hughes

Improve rack level security with the Austin Hughes InfraSolution S-700 Dual Security SmartCard and NumPad for two factor authentication to verify user identification. It is a rigid and durable alloy swing handle for maintaining reliable physical security, combined with a sophisticated control panel with 2.8-inch touchscreen and keypad function.

The built-in smartcard sensor is compatible with MiFARE or Proximity smartcards. LED colour modes on the smartcard handle indicate the lock status – for example, locked, authorised unlock and unauthorised rack access. By connecting to InfraPower W3 version intelligent rack power distribution units (PDUs) with temperature and humidity sensors, the controller can also provide local monitoring for amps plus temperature and humidity.

InfraSolution S-700 provides a solution which can be used to upgrade a myriad of third-party racks to a reliable access control system. Supplied with free software (ISU-01), clients can change the admin/user passcodes and assign smartcards with up to 50 user smartcard authentications per control panel.

To find out more **CLICK HERE.**
www.austin-hughes.com

Staying
race to t

John Hall of Proximity Dat
data closer to users and cu
overlook a data centre's se

Colocation and cloud hosting is booming. The considerable capital expenditure involved in maintaining secure up to date critical data centre infrastructure in house means businesses are increasingly outsourcing their IT workloads and data storage to colocation data centre operators.

DRIVING FORCE

The need to minimise latency to improve productivity, competitive advantage and customer experience is driving more localised colocation in support of decentralised computing models. Highly connected – including links to local internet exchanges – and located in proximity to large conurbations and densely populated cities, edge colocation facilities are becoming essential links between centralised clouds and hyperscale data centres and the end users, computers, machines and devices at the network edge.

However, in the rush to bring data closer to users and customers, it is still as important as ever not to overlook a data centre's security credentials. After all, the flipside of greatly enhanced cybersecurity is that it drives threat actors to work even harder at finding new ways of hacking, stealing sensitive data or causing service disruption. It also increases the risk of a malicious physical attack borne out of frustration, or perhaps something even more sinister. The Centre for Protection of National Infrastructure (CPNI) advises data centre operators and their customers to both have individual risk management strategies designed to protect their critical assets and systems.

PHYSICAL FITNESS

It is important to remember that in a colocation or cloud hosting environment

safe in the he edge

ca Centres explains why, in the rush to bring ustomers, it is still as important as ever not to ecurity credentials

the user/customer has ultimate responsibility for protecting the data they process and store. The same applies, for example, to the customer's networking equipment used in a shared colocation data hall – it is down to the user to ensure sufficient controls are in place to safeguard access. Fortunately, modern industry compliant data centres plan for the worst to happen by taking steps to protect against, detect and pre-empt attacks of a digital or physical nature and, should these occur, still be able to maintain service availability.

Visiting a prospective colocation data centre is the best way to ensure the correct levels of protection are in place. However, in the case of outsourcing to cloud providers this may not be possible since several data centres may be used in different locations.

Either way, a risk assessment should be undertaken by the customer. Check that layered physical security measures are in place to prevent unauthorised access to critical parts of the site. As a minimum, there should be high security grade perimeter fencing, anti-ram bollards, deployment of digital tripwires and infrared intruder monitoring technology, along with biometric card and fingerprint access control for personnel and visitors. A pass wearing policy should be mandatory for staff and visitors, along with a stringent visitor and change management system. CCTV should be installed throughout the campus (night vision for external) and at entrances to/exits from data halls. Trained security personnel should be a prerequisite.

TIME AND PLACE

A data centre's physical location is an important contributor to its overall physical security. Clearly, those based in busy urban areas could be at greater risk of ingress but with the appropriate measures in place this can be mitigated as part of a risk assessment in terms of the types of threat the facility's security measures are designed to counter. Where feasible, a facility should be set well back from access roads – by at least 25m.

In data halls, once through biometrically controlled entrance doors, customer racks will most likely deploy biometric locking devices. Check what other steps the operator is taking to maximise security and access control. For example, in a shared

> ‘Accreditations governing data security, access and protection are a valuable way of obtaining the documentary evidence required as part of a data centre risk assessment.’

hall housing several customer racks ensure these are located together. Also, assess the steps being taken to minimise the cables running across the data hall floor and the protection used.

BIGGER PICTURE

In addition to the physical and digital security aspects, access to customer data hinges on various other factors that all contribute to a data centre’s overall resilience and ability to securely store and protect customer data. These include a data centre’s forwards power availability, uninterruptible power supplies (UPS) and back-up generators, as well as the cooling technologies used for supporting high density racks.

Additionally, there will need to be adequate diverse on-site network connectivity in the event of one or more networks being compromised. Also, check the meet me room security arrangements governing the various network providers, as this and the facility’s building management system’s (BMS) network can be a way in for hackers.

RISK FACTOR

The operational management and engineering competence of a data centre’s on-site personnel is a further risk factor. There is potential for human error, for example, when configuring and interconnecting hybrid cloud environments. This is a complex process and could present a risk to customer data. There are also logistical issues to consider, not least if data centre personnel are required to install new customer servers or move existing ones from elsewhere.

Discuss the actions the data centre would take in the event of a fire or power outage. Ask about how often and what happens when maintenance and infrastructure testing is undertaken. These

considerations should be an integral part of the operator's service level agreement (SLA) under disaster recovery and business continuity.

SEARCHING FOR CLUES

Accreditations governing data security, access and protection are a valuable way of obtaining the documentary evidence required as part of a data centre risk assessment. These will include, for example, BS ISO 27001:2013, BS ISO 9001:2015, PCI DSS, SSAE-16, ISAE-3402 and CSA CCM v3.0.1.

When it comes to data privacy and protection, understanding the legal jurisdiction and sovereignty of your data is essential. According to the UK's National Centre for Cyber Security (NCCS), if the physical location or legal jurisdiction is outside of the UK, you will need to determine whether the country or territory that you are transferring data to, or processing it in, would be considered a restricted transfer. Furthermore, you must determine whether the storing or processing of any personal information is taking place. If so, the General Data Protection Regulation (GDPR), as it applies in the UK, tailored by the Data Protection Act (DPA) 2018, need to be adhered to.

Consider too what would happen regarding gaining access to your data if the cloud or colocation provider should go into administration. Ensure a legal agreement is in place that allows legal access to your data.

GETTING PRIORITIES RIGHT

While a data centre's location and its impact on network latency and bandwidth availability are now high priorities, its security and access control credentials remain fundamental evaluation criteria. The level of safety afforded to customer data by a data centre is largely down to the quality and scope of the preventative security measures, deterrents, policies and disaster recovery contingencies in place. However, without sufficient resilience – power availability and fit for purpose critical infrastructure – even the most secure of data centres will put your data at risk. Taking a holistic view is therefore key. ■

JOHN HALL

John Hall is managing director colocation at Proximity Data Centres. Responsible for leading customer engagement, he has more than two decades of experience managing sales, marketing and commercial functions in the data centre, IT outsourcing and telecoms industries.

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Servitisation Of The Cooling Industry – Cooling as a Service (CaaS) is a white paper from the **Basel Agency for Sustainable Energy (BASE).** **CLICK HERE** to download a copy.

The Road To Net Zero Data Centres: Reducing Emissions By Transitioning To HVO Fuel is a white paper by **Kao Data.** **CLICK HERE** to download a copy.

Factors To Consider When Adopting A DCIM Solution is a blog from **RiT Tech.** **CLICK HERE** to read it.

Uptime Institute has released the latest instalments in its ongoing Executive Advisory Report series – Tackling Greenhouse Gases and Reducing The Energy Footprint. Executive summaries of all available reports in the series are accessible by **CLICKING HERE.**

Monetizing The Value Of Passive Optical LAN For Developers, Owners And Tenants is a webinar from the **Association for Passive Optical LAN (APOLAN).** **CLICK HERE** to watch it.

DC Resistance Measurement vs PoE Testing – What's The Difference? is an on demand video from **AEM.** **CLICK HERE** to watch it.

From Enterprise To Edge: Speeding Deployment and Management Of Complex IT Infrastructures is a white paper from **Vertiv.** **CLICK HERE** to download a copy.

Vantage Data Centers enters power purchase agreement with SolarAfrica for Johannesburg data centre campus

Vantage Data Centers has entered into a 20 year power purchase agreement (PPA) with SolarAfrica. This agreement will enable Vantage to supplement the local grid that powers its Johannesburg (JNB1) data centre campus with renewable energy.

The Northern Cape of South Africa is considered one of the most abundant solar sites in the world. Within SolarAfrica's larger solar farm, Vantage's investment will support the production of 87MW of renewable energy and is forecasted to reduce the emission of CO2 in the region by an additional 3.8 million tons over the lifetime of the agreement. Vantage's Johannesburg data centre campus will have 80MW of IT capacity, of which up to 33 per cent is expected to be supported by the solar farm.

Vantage has also announced that two greenfield campuses in Berlin and Warsaw are now operational. The opening of a Warsaw campus marks the company's first facility in Poland, while the development in Berlin marks the company's second campus in Germany.

Tribeca provides robust private cloud and colocation services through Custodian Data Centres partnership

As the financial sector has evolved, it was clear that Tribeca had to do the same to keep up with market demand. However, within this highly specialised sector, specific challenges became clear and providing its clients with resilient and ultra-low latency connectivity would be vital for Tribeca to keep up with the fast paced demands of the financial industry.

This growing demand led Tribeca to Custodian Data Centres, which was able to provide not only resilient connectivity but also a physically and digitally secure environment. Its reputation for 99.9 per cent uptime and unwavering customer service made the perfect partnership for Tribeca and its customers.

With ultra-low latency at the top of Tribeca's agenda to adhere to its customer's requirements, Custodian's own resilient dark optical fibre network, which connects its Maidstone facility to the major communication points of presence across London and the South East, was a key asset Tribeca could not afford to miss This partnership has created significant advantages for Tribeca, including the option of providing its customers with a private hosted environment to manage its data.

Secure IT Environments completes data centre upgrade for Three Rivers District Council

Secure IT Environments has completed a multi-phase major upgrade project for the 70.8m² main data centre at Three Rivers District Council. The site, at the main offices in Rickmansworth, provides essential digital services to public sector staff, and those used to support the local services that the district council provides.

The multi-phase project included the provision of a new energy efficiency UPS system consisting of a Riello Multi Power Combo UPS cabinet with two 25kW three-phase power modules. All UPS batteries were also replaced and a deep clean of the server room undertaken.

A phased replacement of the existing carpeted raised access flooring tiles with new vinyl tiles was completed, along with a full replacement of two 20 year old air handling units (AHUs) with new energy efficient FlaktGroup Multi-DENCO models.

The final phase of the project was to replace the fire suppression gas bottles at the site, which had reached end of life. Following a full assessment of the existing system, Secure IT Environments provided a new fire suppression system, as well as the replacement cylinders, in order to ensure the system could provide protection long into the future.

PROJECTS & CONTRACTS IN BRIEF

Enterprises in South Korea now have access to cost effective, low latency connectivity services from Colt Technology Services. The expansion sees Colt establish network hubs in four key carrier neutral data centres in the Seoul metropolitan area and deliver speeds of up to 40 Gigabit Ethernet.

Emovis UK is leveraging the Progress WhatsUp Gold network monitoring solution to monitor its entire IT ecosystem, eliminating blind spots and reducing the impact of performance issues with early detection.

North has secured a £7m contract to transform digital connectivity and network security for City of York Council.

Chalmers University of Technology is using Lenovo and NVIDIA's technology infrastructure to power its large scale computer resource, Alvis. The project has seen the delivery and implementation of a clustered computing system for artificial intelligence and machine learning research.

Quickline Communications has taken space at Proximity Data Centres' edge colocation facility in Nottingham to support several high density racks.

Asperitas has announced a partnership with Unica Datacenters for the execution of commissioning, service and maintenance of Asperitas products to provide customer satisfaction for immersed computing projects.

CNet Training

CNet Training has announced the launch of a new program – Network Infrastructure Fundamentals (NIF). It is designed for those seeking to gain detailed knowledge in the field of telecommunications network infrastructure.

The program delivers an in-depth understanding of the principles of communications systems, the various voice and data communications technologies, and how to relate that information to the complexity of the physical network required. It also demystifies the technical terminology that permeates the network infrastructure, using simple language, clear explanations and useful analogies.

NIF is an eight hour distance learning or a one day instructor led program, designed for individuals who are either new to the network infrastructure sector or are seeking to develop their knowledge in relation to telecommunications networks.

To register for the program or to check for available dates please call 01284 767100, **CLICK HERE** to send an email or to visit the website **CLICK HERE.**

www.cnet-training.com

Rittal

Rittal is expanding its smart cooling unit solutions with the new Blue e+ S range. This latest generation of cooling units with lower output categories of 300W, 500W and 1,000W has been designed for efficiency, ensuring a smaller footprint and lower costs.

Blue e+ S offers innovative energy saving features for the production process. What's behind this is the technology used, combining a heat pipe with inverter controlled components. The heat pipe works without a compressor, expansion valve or other regulating elements and does not need any electrical energy except to operate the fan. Depending on the thermal energy generated in the enclosure and the current ambient temperature, cooling can be performed with the heat pipe alone.

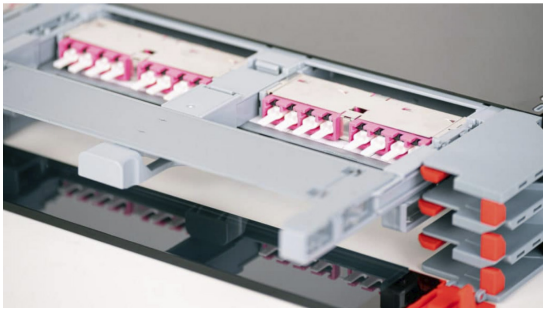
The additional compressor cooling only operates if a large amount of heat has to be dissipated from the enclosure or if the ambient temperature is very high. And what's more – when it does operate, it is far more energy efficient than conventional units. This is because the compressor and fans possess an inverter controlled drive, which automatically adjusts their speeds depending on the requirements.

To find out more **CLICK HERE.**

www.rittal.co.uk

R&M

The packing density of R&M's fibre optic distribution platforms – Netscale 72 and Netscale 48 – can now be tripled, which allows data centres to use available space even more efficiently.



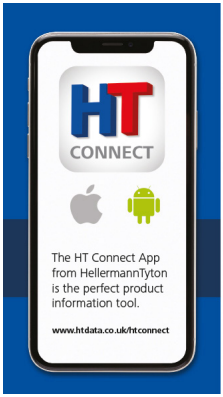
High density distributor, Netscale 72, and mixed media distributor, Netscale 48, trays can be equipped with CS, SN and MDC connector types. Despite the high port density, network technicians can easily plug in and unplug patch cords with these very small form factor (VSFF) connectors. This enables data centres to triple the number of connections per height unit in 19-inch racks, compared to using LC connectors.

R&M emphasises that this represents a fundamental optimisation of the ratio of cost and surface area. For example, it can set up four channels per module to create links with 4x100Gb/s or 4x400Gb/s. Such solutions will be in demand for the upcoming migration to 400 Gigabit Ethernet networks.

For more information **CLICK HERE.**
www.rdm.com

HellermannTyton

The new HT Connect app from HellermannTyton has been designed to bring products to life in a live environment. Using augmented reality (AR) through a mobile phone or tablet, you can see a wide range of products on your desk, on a wall or even out on-site.



Using HT Connect, it's possible to take a closer look at HellermannTyton's products, with many of the selected models having moving parts such as opening doors, removing covers or lifting trays. You can use your touchscreen to rotate the products and zoom in up to 500 per cent.

HT Connect also provides additional product information including datasheets, installation guides and videos where available. This gives installers and engineers in the field everything they need at their fingertips when it comes to optical fibre network installation.

The HT Connect app is available to download from both Apple and Google Play. To find out more **CLICK HERE.**
www.htdata.co.uk

All you need to know

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Choose life

Ed Ansett of i3 Solutions identifies and evaluates the real embodied carbon cost of a data centre

Global emissions from new build projects are at record levels. Consequently, construction is moving further away from, not closer to, net zero buildings. With the current focus very much on the carbon footprint of facility operations, there is a case for taking a whole life carbon approach when assessing data centre carbon impact.

COST CENTRE

According to the United Nations Environment Programme (UNEP) the carbon cost of building is rising. The UNEP Global Alliance for Buildings and Construction (GlobalABC) global status report highlighted two concerning trends. Firstly that, 'CO2 emissions from the building sector are the highest ever

‘The complexity of mission critical facilities makes it more important than ever to have a comprehensive process to consider and address all sources of embodied carbon emissions early in design and equipment procurement.’

recorded...’ and, secondly, ‘the new GlobalABC tracker finds the sector is losing momentum toward decarbonisation’.

Embodied carbon costs are mainly incurred at the construction stage of any building project. However, these costs can go further than simply the carbon price of materials including concrete and steel, and their use. And while it is true that not all buildings are the same in embodied carbon terms, in almost all cases the emissions created at the beginning of the building lifecycle simply cannot be reduced over time.

FACT OF THE MATTER

Since this is often and, in some cases, especially true in data centres, it is incumbent to consider the best ways for the sector to identify and evaluate the real embodied carbon cost of infrastructure dense and energy intensive buildings. Technical environments and

energy intensive buildings such as data centres differ greatly from other forms of commercial real estate, such as offices, warehouses and retail developments.

Focusing on the data centre, let's take, as an example, a new build 50MW facility. It is clear that in order to meet its design objective it's going to require a great deal more power and cooling infrastructure plant and equipment to function in comparison with other forms of buildings.

RUN TIME

Embodied carbon in a data centre comprises all those emissions not attributed to operations, as well as the use of energy and water in its day to day running. It's a long list that includes emissions associated with resource extraction, manufacturing and transportation, as well as those created during the installation of materials and components used to construct the built environment.

Embodied carbon also includes the lifecycle emissions from ongoing use of all of the above, from maintenance, repair and replacement to end of life activities such as deconstruction and demolition, transportation, waste processing and disposal. These lifecycle emissions must be considered when accounting for the total carbon cost.

The complexity of mission critical facilities makes it more important than ever to have a comprehensive process to consider and address all sources of embodied carbon emissions early in design and equipment procurement. Only by early and detailed assessment can operators inform best actions that can contribute to immediate embodied carbon reductions.

ADDING UP

Boundaries to measure the embodied carbon and emissions of a building at different points in the construction and operating lifecycle are cradle to gate, cradle to site, cradle to use and cradle to grave carbon calculations. Cradle is referenced as the earth or ground from which raw materials are extracted.

For data centres these higher levels of infrastructure are equipment related, additional and important considerations. In embodied carbon terms they will be categorised under Scope 3 of the GHG Protocol Standards. Much of the Scope 3 emissions will be produced by upstream activities that include and cover materials for construction. However, especially important for data centres is that they

also include the carbon cost for ongoing maintenance and replacement of the facility plant and equipment. That brings us to whole of life calculations that will combine embodied and operational carbon.

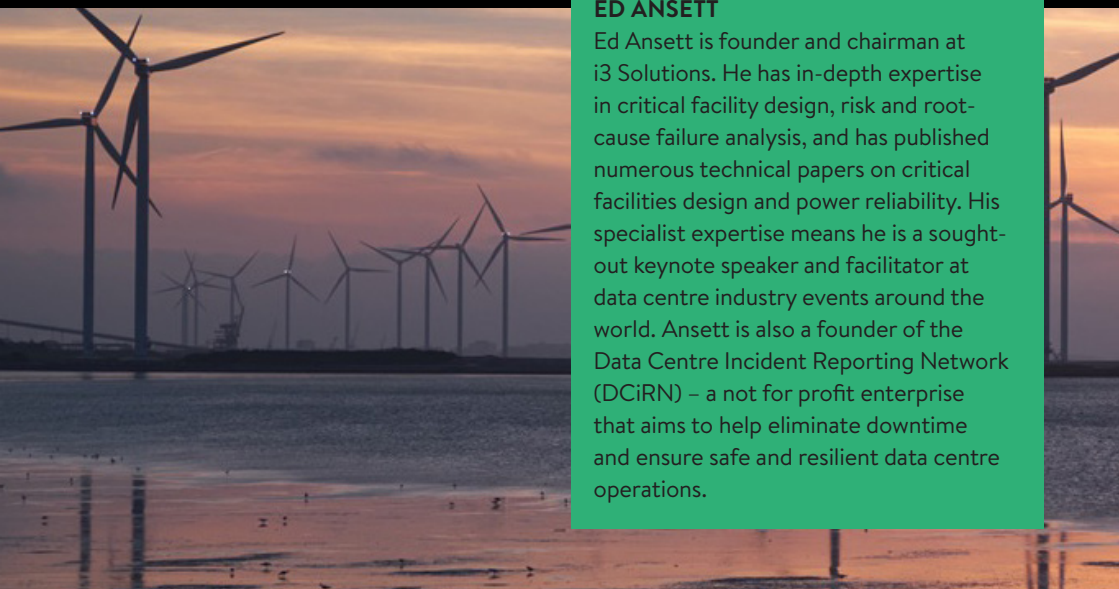
Combining embodied and operational emissions to analyse the entire lifecycle of a building throughout its useful life and beyond is the whole life carbon approach. It ensures that the embodied carbon emissions, together with the embodied carbon of materials, components and construction activities, are calculated and available to allow comparisons between different design and construction approaches.

MORE THAN MEETS THE EYE

The great efforts to improve efficiency and reduce energy use have slowed operational carbon emissions, even as demand and the scale of facilities has surged. But reducing operational energy of a facility is measured over time and such reductions are not accounted for until years into the future. There is a compelling reason to include embodied carbon within all analyses and data centre design decisions. A whole life carbon approach that considers the embodied and operational emissions provides the opportunity to contribute positively to global goals to reduce emissions of greenhouse gases – and will save financial costs. ■

ED ANSETT

Ed Ansett is founder and chairman at i3 Solutions. He has in-depth expertise in critical facility design, risk and root-cause failure analysis, and has published numerous technical papers on critical facilities design and power reliability. His specialist expertise means he is a sought-out keynote speaker and facilitator at data centre industry events around the world. Ansett is also a founder of the Data Centre Incident Reporting Network (DCiRN) – a not for profit enterprise that aims to help eliminate downtime and ensure safe and resilient data centre operations.



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