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TERACO
AFRICA'S DATA CENTRE

The New Digital Environment

We look at how Teraco is building a digital environment to help clients succeed, and the increasingly blurry line between service and support.

TERACO HOLDS A SPECIAL PLACE IN THE HISTORY OF SOUTH AFRICAN DATA CENTRES, AS THE COUNTRY'S FIRST VENDOR NEUTRAL FACILITY TO FOCUS PURELY ON COLOCATION AND ENVIRONMENTALS SUCH AS COOLING AND HUMIDIFICATION WHILE BOASTING 99.999% UPTIME ON POWER SLA'S.THE COMPANY WAS CONCEIVED IN LATE 2008 AS THE LOCAL TELECOMMUNICATIONS MARKET BEGAN TO DEREGULATE, AND TERACO'S FOUNDERS RECOGNISED AN OPPORTUNITY FOR A TRULY VENDOR NEUTRAL DATA CENTRE OFFERING IN SOUTH AFRICA. The possibility of providing a service that was not tied to any carrier or ISP became not only technically feasible and economically viable, but increasingly desirable to South African enterprises which needed unrestricted choice in how they connected to the Internet.

Teraco's with first data centre began operations in Cape Town in early 2009, and driven by market demand, a second data centre went live in Johannesburg a year later. The opening of a Durban facility followed in 2012. The company recently increased the Johannesburg metro footprint, which has expanded to include two buildings at its Isando Campus and a greenfield site in Bredell, housing approximately 15 000sqm of white space combined and offering 20 MVA and 24MVA of power respectively.

It's a period of growth for Teraco, with the company currently designing additional buildings for their Johannesburg region that they have already secured land and power supplies for. Their Isando Campus also accommodates satellite teleport equipment and wireless deployments are possible at all the regional facilities.

As Brendan Dysel, head of infrastructure management for the company explains, "Clients benefit from the cost savings and improved resilience of securely housing their information systems and networking equipment in a colocation facility purpose-built and operated to global best practice by an organisation with an absolute focus on data centre technology and infrastructure."

Teraco has built a name for itself providing a range of data centre services across the digital environment. Client's deploy servers and

SCHNEIDER ELECTRIC POWERS AFRICA'S MEGA DATA CENTRE

A mega data centre lies at the heart of any enterprise business. Applications and big data provide critical services to users both inside and outside any organisation and have become so integral to the day-to-day running of a business, that any downtime in the data centre is unacceptable and not tolerated to ensure business continuity.

For this reason, data centre operators understand that reliable power solutions must be implemented as part of their data centre design strategy, regardless of whether they are building a new facility or expanding an existing older data centre.

"Thousands of organisations rely on the data centre services of Teraco, Africa's mega data centre. For this reason, it has chosen Schneider Electric over the past few years, to meet its various power requirements, be it medium voltage (MV), low voltage (LV) or in Rack systems." says Lester Maritz, End-User Vertical Segment Sale Manager, IT Division at Schneider Electric.

He says Teraco is aimed to become the biggest vendor neutral data centre operator in Africa. "Over the past few years, they have gone from strength to strength and are major players in this industry in Africa. Teraco builds and operates colocation data centre facilities that allow customers to deploy crucial IT equipment, specialised caged infrastructure including disaster recovery, in a scalable way. It has also expanded its operations over the last nine years to include many data centres, namely, Cape Town, Durban and Johannesburg, and is looking to expand all operations even further, with the addition of a new facility marked for the future."

Maritz says technology is a key driver for Teraco, but their drive with technology works hand-in-hand from a financial point as well, to meet current trends and still be within the market pricing requirements. The two play to each other. "One of the key factors that fall into that pillar of requirements is service reliability and tenability as well. They might be getting a great technology, but how do you look after that, and how do you service them. Sometimes price is first, sometimes technology is first. But the question is how to provide the best sustainability."

When Teraco came to selecting its power solutions, Maritz says many products on the market today are on par with each other - the functionalities are similar. "It's the integration of our product sets through EcoStruxure, our open, interoperable, IoT-enabled system architecture and platform. EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity and leverages advancements in IoT, mobility, sensing, cloud, analytics and cybersecurity to deliver Innovation at Every Level. This includes Connected Products, Edge Control, and Apps, Analytics & Services thus making it easier, for a turn-key grid-to-chip approach."

According to him, the company went through a motion where they were using various other vendors, in Power Distribution Units (PDUs). They tried many products but it didn't work for them. "Teraco had a need for a specific solution, they asked us to provide four or five different combinations, so they could test them within their own test lab. We made a variety of solutions available to them with the ease of flexibility."

"The Schneider Electric PDU solution worked well, because we have a greater variety, ranging from a low-end spec to a very high-end spec, and they could 'float' anywhere between those specs and the solution would still integrate."

From a project point of view, he says Teraco required Schneider Electric to create a roll out plan. "We made sure we had stock availability and for the duration, made sure they had access to a dedicated amount that was ready to go and could also be changed quickly to a new product set. In this way, we could ensure that we met the demands of their dynamic data centre growth as their requirements from a power point of view changed over time due to the vast number of clients that are hosted within their facilities."

This level of flexibility within the stable of Schneider Electric was also experienced with the other product sets that Teraco invest in from Schneider Electric to complete the EcoStruxure experience.

Schneider Electric is leading the Digital Transformation of Energy Management and Automation in Homes, Buildings, Data Centers, Infrastructure and Industries. With global presence in over 100 countries, Schneider is the undisputable leader in Power Management; Medium Voltage, Low Voltage and Secure Power as well as Automation Systems.

He attributes the organisation's success to the relationship it has built with Teraco. "Services are critical and we are constantly striving to improve this service delivery in a dynamic situation that we find ourselves in. Initially in the past we had issues, but we resolved those problems, we worked through them with the technical teams at Teraco and we do a lot of business with them now. We work through a partner based business model as Schneider Electric employs a full channel model as our route to market however there is always someone available on the other side of the phone to address any issues."

Walking in, dropping a solution off and disappearing, does not work for them. Teraco want long-lasting relationships and people who will work with them for the foreseeable future; as data centres are extremely dynamic and technologies are constantly evolving and so to are the Teraco client's needs. That is what Schneider Electric provides, Maritz concludes.

well as an economical and flexible alternative to businesses running and expanding their own data centres.

A PERIOD OF GROWTH

Brendan Dysel has a unique perspective on the story of how Teraco has built such a stellar education, with a career path that has shown him all sides of the business.

"I started at Teraco in 2010 as Head of Facilities, from there I went on to be the Head of Data Centre Systems in 2013 and have recently taken on the role of Head of Infrastructure Management," he explains. "Effectively the role now covers all aspects of the day to day site operations and designs for new data centres. The previous roles also included security and compliance."

Through his time in the company Dysel has seen some truly stupendous achievements on behalf of Teraco, especially over the last year.

"The growth experienced in 2017 has been phenomenal," he tells us. "At the beginning of 2017 the data centre facilities had access to over 10MVA of power nationally. By 1 November 2017 this has grown to nearly 50MVA."

MAKING THE MOULD

As is often the case, with new achievements come new challenges, and for Teraco that challenge has come in the form of finding people with the skills they need to provide the level of service they are known for.

"With this growth comes the pressure of managing the facilities," Dysel admits. "The shortage of skilled data centre orientated individuals in South Africa causes major headaches. One element Teraco will work tirelessly on is to provide the same exceptional level of service to our clients every day."

Indeed, Teraco has placed a great deal of focus on the operational side of their facilities.

"More than 70% of data centre failures worldwide are caused by human error," Dysel informs us. "Our focus is to ensure staff are covered to the same resilience as per the critical engineering systems. Finding people with the correct skill sets is becoming increasingly difficult."

In the face of this challenge, Teraco's recruitment focus is less on finding people with the necessary qualifications and experience already in place, and more on finding people with the right personal qualities that can be moulded and developed into the kinds of people Teraco needs.

Dysel explains, "Due to the skills shortage, Teraco conduct psychometric tests to find suitable candidates that meet the Teraco mould. There are fundamental skill sets required, however Teraco find suitable candidates and invest in providing additional skills. Toolsets are provided to the teams covering BOD, SOPs, MOPs, CP, and PDP with continuous training on site. Teraco promotes internal growth with personal development plans for all individuals."

USING ENERGY EFFICIENTLY

Data centres are naturally reliant on energy, and in today's world Teraco understands that it is critical the company use that energy responsibly.

"From inception, every design has changed to incorporate energy efficient equipment," Dysel says.

Among the many energy efficiency measures Teraco has put in place are LED lighting with PIR sensors, EC fans and energy efficient compressors on HVAC systems, ultrasonic humidifiers, and indirect free cooling on dry air cool systems, CRAC units and chiller systems. They also continuously optimise their HVAC systems linking that process to client IT demand, and maintain energy efficient UPS systems.

This prevailing attitude of responsibility is reflected in Teraco's Corporate Social Responsibility work as well.

Dysel tells us, "Teraco is privileged to be a founding partner of the Tshimologong Precinct. As Africa's largest data centre Teraco support the foresight and vision of Wits University and the Johannesburg Centre for Software Engineering (JCSE) in creating a vibrant digital technology hub in Braamfontein, Johannesburg."

Tshimologong takes its name from the phrase "new beginnings" in seTswana. The project is providing an exciting environment that will see programmers, designers, developers and entrepreneurs congregating in a half city block in Braamfontein. Teraco joins a prestigious alliance of strategic partners that includes names as recognisable as Microsoft, IBM, Cisco, Telkom, and ACSA, as well as the City of Johannesburg itself.

Beyond this, Teraco is involved in a range of projects, programmes and activities to develop skills, encourage innovation and promote the development of new enterprises. As well as the successful Agile Africa conference that Teraco spearheaded, the company has also launched a number of challenges such as the Wits Campus Personal Navigator Challenge, which focussed on how to make the Wits Campus more easily accessible to disabled students; and the GeoJozi Challenge that helped solve Johannesburg street address problems and improve service delivery.
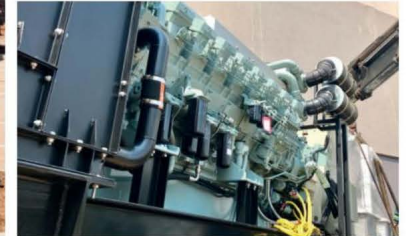
AHEAD OF THE CURVE

All of these projects are built on the strong foundation of Teraco's core business, and Teraco knows a thing or two about maintaining foundations. Their SLA's are guaranteed with the concurrent maintainability that is at the core of their infrastructure designs. Critical engineering assets are maintained in accordance with the best standards in the industry as well as the recommendations of manufacturers. These strong maintenance practices are supported by a system of duel, diverse building management systems that monitor critical engineering assets to ensure any faults are identified and dealt with quickly and efficiently.

Another critical element of any data centre environment is the supply chain. Indeed, like many companies Teraco is finding that customer support is the competitive edge that counts.

"Technology between critical engineering equipment manufacturers is very competitive. Products are very similar however, the support of the product becomes far more valuable than the product itself, due to this competitive nature," Dysel says. "Teraco has strategically partnered with companies who can provide outstanding support, to meet the stringent SLA's offered to our clients"

This is what the future looks like for data centres. There is no longer a market where companies can simply offer a service and sit back, a process of constant support and relationship building is rapidly becoming the standard for the industry, and Teraco is ahead of the curve. ◀

Iso Floor for Data Centres

Bergvik is a global leader and trusted supplier of raised access floor systems and seismic bracing solutions for world class, mission critical Data Center, Telecom and Power applications, with installations in over 100 countries around the world.Bergvik's "dynamic" Iso Floor system's unique design allows for easy adaptation to ever-changing technologies; equipment densities; equipment foot print, and increased cooling demands.

With only 30% of pedestals needed in comparison to traditional raised floors, obstructions from all other installation trades are avoided. The Iso Floor from Bergvik is the only floor system that allows for optimization of the data center space due to it s fully modular design and custom size panel options.

There is no other flooring system that allows for reconfiguration of the floor to suit all future and unforeseen requirements without also rebuilding the sub-structure at extreme cost.

Today, the most common practice is to start by laying out a 600x600 mm floor grid and adapt the Server Rack layout and other equipment to that grid. That makes no sense.

Instead, with the Iso Floor system, you can place the ServerRacks and any other equipment wherever you want. Use any size floor grid module to optimize your floor space, allowing for up to 20% of additional Server Racks. The Iso Floor substructure makes the 600x600 mm module thinking obsolete.
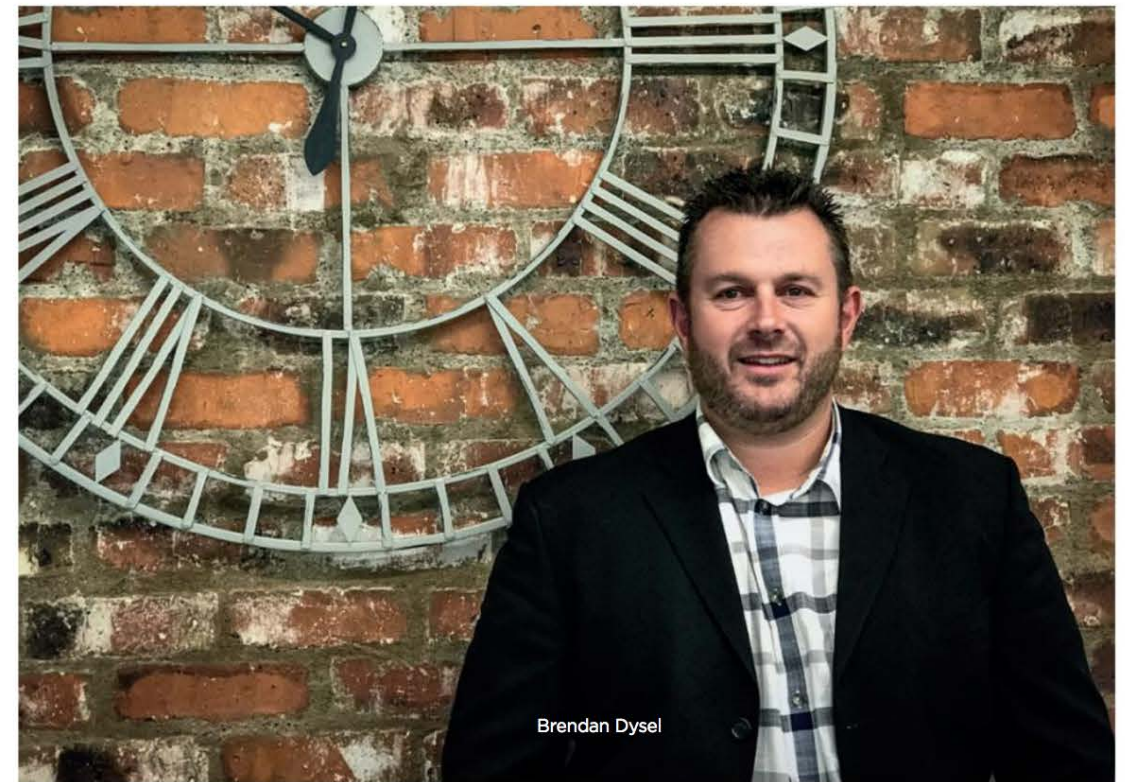
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We look forward to hearing from you.

networking operations across Teraco's colocation data centres to provide them with the highest possible levels of security and optimal operating conditions, ensuring business continuity.

They also offer unrestricted physical and virtual interconnection systems allowing clients to connect to over 200 networks and upstream service providers. This system allows Teraco to install interconnects between clients within a period of only 72 hours.

As well as technology, Teraco's geographical positioning is also crucial to their success. Their data centre hub's international connectivity and cloud service providers form the backbone of a content network for the rest of sub-Saharan Africa's needs, while facilities in Cape Town, Durban and Johannesburg have been tactically positioned at premium sites whose uninterrupted line of sight to local business hubs and excellent coverage of surrounding areas make them perfectly placed for wireless equipment. Each of those data centres are also placed on the fibre rings of all South Africa's major licensed carriers, with fibre nodes inside the building.

"The Teraco Teleport in Isando, Johannesburg can accommodate colocated client antennae equipment, within close proximity of a highly connected data centre facility," Dysel points out.

The best equipment located at the best locations in the world would be useless without the people to operate it however. Their data centres are staffed by an effective and highly qualified data centre support team that offers expert, round-the-clock service in-line with the response times specified within a Service Level Agreement.

But that 24/7 support is only one element of a strategy that has helped Teraco build strong relationships with its clients, even actively promoting business between their clients, carriers and service providers, allowing unrestricted traffic exchange between them to create new possibilities for business within their data centre marketplace. Teraco has established itself as the perfect backup site for disaster recovery as