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Data Centres vs Energy Costs

How to reconcile reducing energy consumption and business needs

Reduce Your Data Centre Energy

The Current Climate

There's no getting away from the cold, hard fact that data centres represent a growing share of global power consumption and emissions.

However, with increasing demand for data from businesses and consumers, how can data centre companies reconcile their sustainability responsibilities and spiralling energy costs with the need to meet business critical data needs - and continue thriving?

Assetspire could have the solution. We are dedicated to providing better software to our clients to help businesses succeed.

We believe our smart and innovative asset management solutions can revolutionise the way businesses are run, saving you costs, time and wasted energy.

Our solutions and services have been designed and built based on our experience from working with some of the largest enterprises around the globe. We empower businesses with the visibility and insight they need to make more intelligent strategic decisions and more effectively manage the lifecycle of their assets.

Yet the question remains, how can your data centre managers ensure smarter ways of working, while still ensuring the information you need is always accessible, completely accurate and up to date?

Energy Consumption Levels are a Real Problem for Data Centres

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Energy Consumption

Studies have shown that data centres use 10% of the world's energy consumption, and in the UK alone, data centres, including colocation facilities, account for at least 12% of all UK energy consumption.

10%
World's energy consumption

12%
All UK energy consumption

Some studies and forecasts even estimate that data centre power consumption alone could drain 20% of UK power generation in the next few years unless current trends don't adapt to environmental concerns.

Additionally, as consumer appetite for mobile and internet traffic skyrockets, companies at the heart of the information industry will see an explosion in a demand for energy as data storage requirements increase. The power-hungry behemoths of the digital world, like Facebook, Google and Amazon, are already making steps towards making their data centres more energy efficient by integrating the latest technologies and making more use of renewable energy. The upkeep, maintenance and environmental optimisation challenges these companies face mirror those seen across data centres worldwide.

Undeniably, data centres are at the nucleus of things when it comes to high energy usage - but there are numerous ways in which business needs and corporate responsibility can be aligned - and even reconciled.

As the realisation dawns across the industry that smarter ways of working can save both costs and the planet, the future of data centre management is actually looking pretty cool.

Boost Energy Efficiency in Your Data Centre

1.

## Optimise Your Environment With Next-Gen DCIM

So, we know that thermal optimisation and cooling is one of the most energy-hungry elements of a data centre, and that the volume of data stored and processed has a direct correlation with these energy requirements to run efficiently. Add to that the fact that most data centres need to monitor two types of cooling systems - rack cooling and fans to monitor CPU temperature - it's obvious that this is where most of your energy consumption will lie.

Truly optimising your data centre environment will not only reduce energy costs, increase capacity for growth and improve reliability but will also reduce operating overheads, improve power use effectiveness and generally allow data centre managers to get the most out of existing equipment.

Using airflow techniques and traditional cooling systems is all very well in theory, but being able to make strategic decisions on cooling methods and thresholds and having the confidence to raise data centre temperatures will make all the difference to your energy consumption and costs. However, you can only do this with reliable, accurate data about your assets and data centres.

Using intelligent asset management software, coupled with the latest DCIM innovations, gives you this power.

By providing data centre managers with real-time information from the floor or server room, it's easy to see which assets can be thermally optimised, and which may need additional cooling support - and finally say goodbye to an inefficient one-size-fits-all cooling strategy.
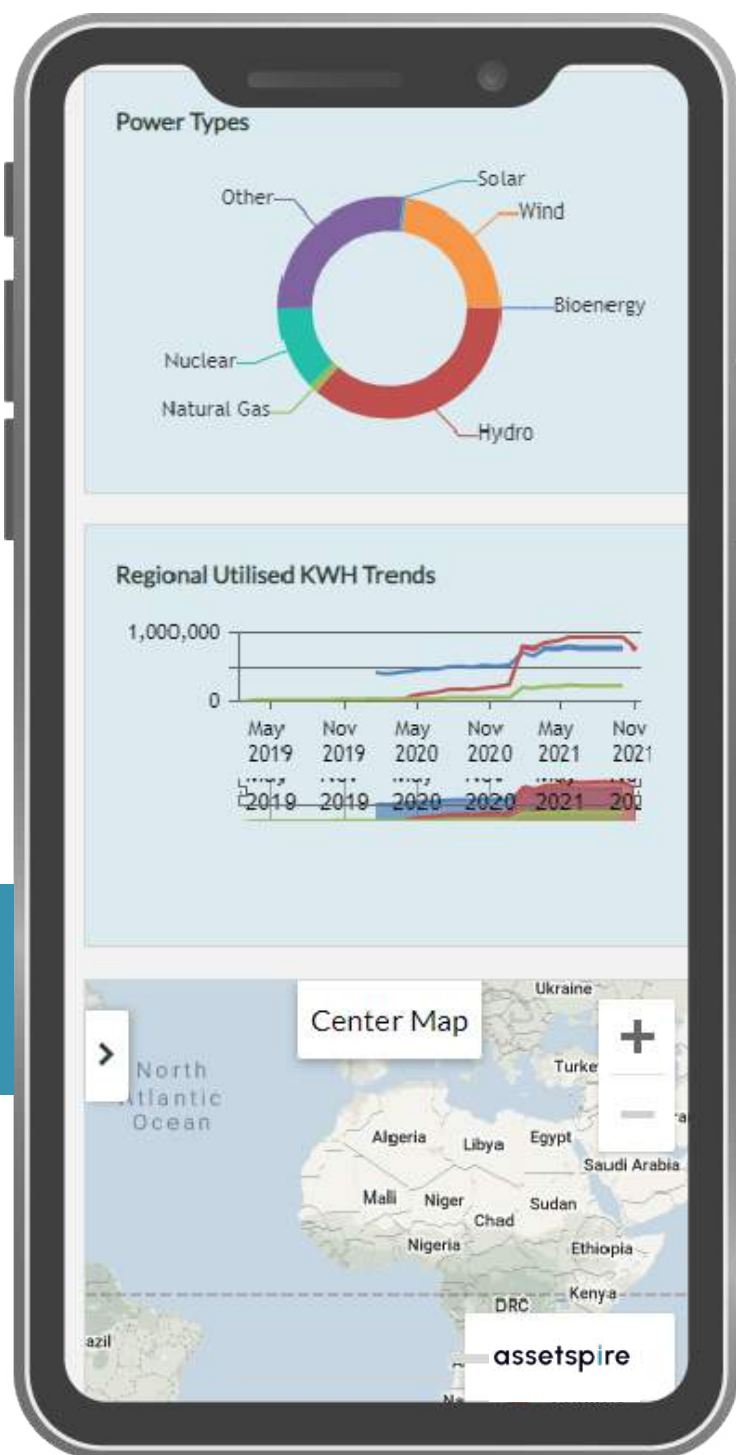
2.

X-ray Vision on Your Power Consumption

To be able to monitor and measure your power usage effectively, it is vital that you know exactly what you have, where it is and how it is performing. After all, you can't manage what you don't know you have.

Traditional PDUs do play a vital role in monitoring and identifying rack power consumption. Yet having critical - and accurate - information at your beck and call wherever you are, not just in the server room, is essential to ensure your data centre remains efficient and stable. The ability to view your energy consumption, utility management and also to have accurate, constantly updated information is key to be able to plan proactively and intelligently identify and project trends.
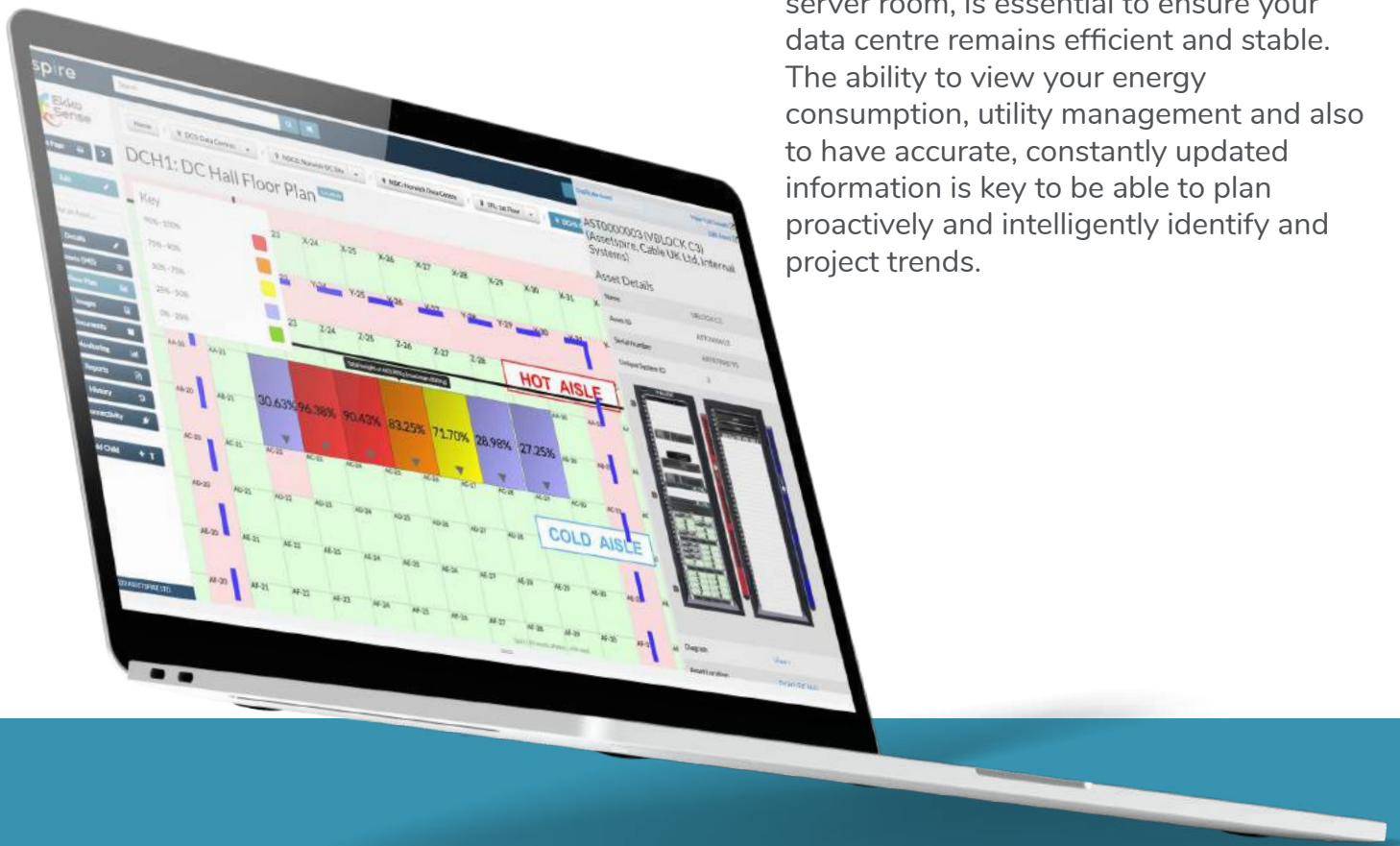
Assetspire's 3DCIM solution, bringing together the innovative Spire™ platform and the super-intelligent Ekkosense solution, enables true thermal optimisation and machine learning algorithms that can predict potential problems, even before they transpire.

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3. Turn it Off!

You wouldn't leave your kettle boiling after you'd made your Horlicks and gone to bed, so why would you leave your non-mission critical equipment on during non-peak periods such as weekends or holidays?

By gaining a completely accurate and live picture of your usage data, you can confidently determine which assets could be hibernated or powered down entirely to save unnecessary energy usage and reduce costs. With this data at hand, you can realistically consider running a power cycling programme across your facility to power down hardware and assets that aren't in use and conserve energy.

It might sound drastic, but with the right intelligent software in place, you can power down equipment during non-peak times and so power up your energy savings, without running the risk of data corruption or loss.

4.

Identify 'Lazy' Servers

Stop wasting power! Underused, or even completely idle servers, are just wasting energy and devouring your budget.

Do you actually know how many of your servers are currently in use? According to the Uptime Institute's recent survey, as many as 30% of data centres in the world are either underused or completely idle. 30%! That's a lot of expensive dust collectors - and just imagine how much budget is wasted, not to mention the unnecessary energy consumption. But how do you identify where these idle resources are and address the issue?

Intelligent DCIM to the rescue! Innovative software, like Assetspire and Ekkosense's 3DCIM solution means that locating and rectifying idle servers is simple. Being able to gain immediate visibility of all your enterprise assets, including those idle servers, and get true, real-time operational insights into the heart of your data centre is invaluable in the fight against inefficiency.

Intelligent 3DCIM is also reactive on the ground. With mobile optimised software, you can literally track your way to where you need to identify a problem, with the corresponding changes in data automatically updated in your systems.

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5. Is the Future in the Clouds?

Every data centre business across the globe is facing challenges due to new trends in remote working, especially post-pandemic.

However, advances in AI and innovative cloud-based software solutions present an exciting new era of creating a more adaptive and reactive framework to better understand data centre dynamics. AI technology allows you to easily predict cooling and heating trends to make smart decisions on your energy consumption and budgets, even from remote locations.

Cloud-based software allows your teams to control and monitor any asset from anywhere. With Spire™, your remote asset management system is quick and simple for users to keep on top of the flow of assets, whether they are incoming, outgoing or on the move. You have a single overview of all your assets, wherever and whatever they are, throughout your entire enterprise, across all your locations.

By integrating intelligent technology and systems, data can remain accurate and with smart user-friendly experiences, they can also be a joy to operate! It's time to get smart with your assets...

Power Down to Power Up

Power Down to Power Up

Turn Off Everything!

While we don't suggest you take such drastic measures (we're sure your clients won't thank you), just switching off power hungry assets when not needed would represent a substantial energy saving - both in terms of costs, emissions reduction and C02 emissions. Yet many companies are reluctant to use this option due to fears around powering up and reactivation times, or potential failure of critical data or software.

Nevertheless, recent studies have shown that powering down obsolete servers and IT equipment can actually result in a saving of 84% of lost energy. But how can these power down techniques actually be put into practise?

Many data centre managers fear powering off assets that might be needed again in the future, or migrating data to cold or warm storage sites that may need to be accessed quickly.

It's all about being smart. Innovative software solutions that provide accurate data around which systems are being used, where and when, mean that worries around switching off obsolete or unnecessary equipment can be put to rest.

With the advances in server hardware and software capabilities along with intelligent cloud-based storage, powering back up after hibernation modes or restarting unused or underutilised assets is also simpler and more informed, and concerns around lost data can be allayed. Recent research has found that even aggressive shutdown policies have no negative impact on disk lifetime. It's all about having confidence in your systems.

Keeping Things Cool – What's Next?

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Cooling Techniques

Although traditional cooling techniques such as server fan power or in-room climate control still reign, moves have been made into more advanced cooling techniques. For example, systems such as immersion cooling, which involves an immersed, liquid cooled server, using insulating coolant instead of more traditional air-cooling equipment have started to come to the fore.

Alibaba's green facility in Zhanjiakou, China - which upgraded to an immersion cooling solution in 2018 - has eliminated the need for air-conditioning or large refrigeration equipment. As such, the whole system is flexible and can be deployed anywhere, resulting in space savings of up to 75%.

Immersion cooling saving up to
75%
space

Another trend has seen data centres being located in Northern Europe, the Nordics and in even colder climes in search of free cooling. However, UK data sovereignty and GDPR regulations, such as those seen in the UK after Brexit, mean that this option is limited.

It's Got to Be Sustainable
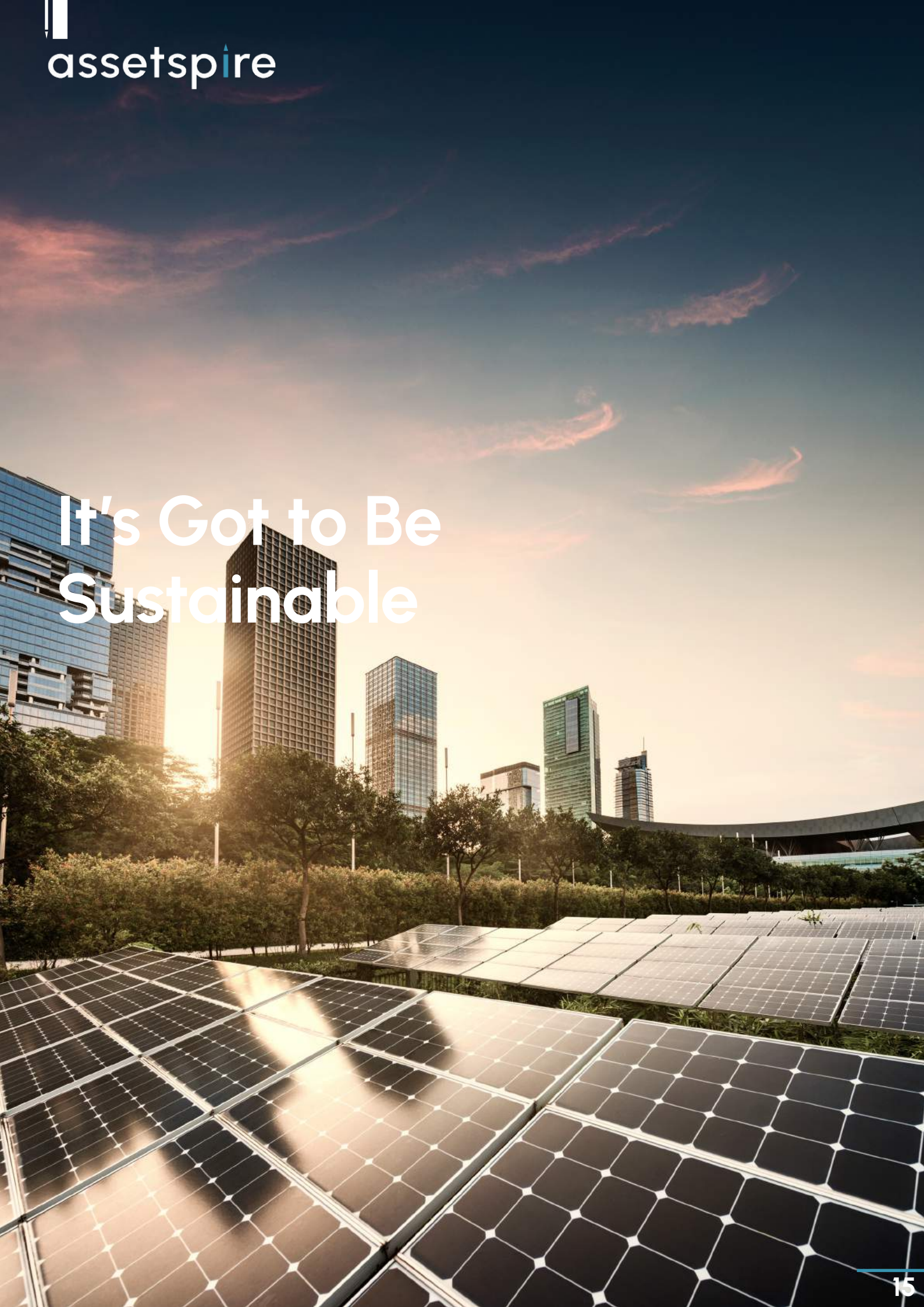
Cooling Techniques

Adding to an already detailed body of climate research, the 2021 IPCC Report from the UN makes clear the critical need for immediate and drastic climate action and highlights the indisputable link between climate change and human activity. Data centres and colocation providers across the globe are approaching operational capacity limits and energy costs are increasing alarmingly.

At Assetspire we take this warning seriously and work with our customers to provide accurate data around where they are today, to help build a plan for where they need to get to in the coming years.
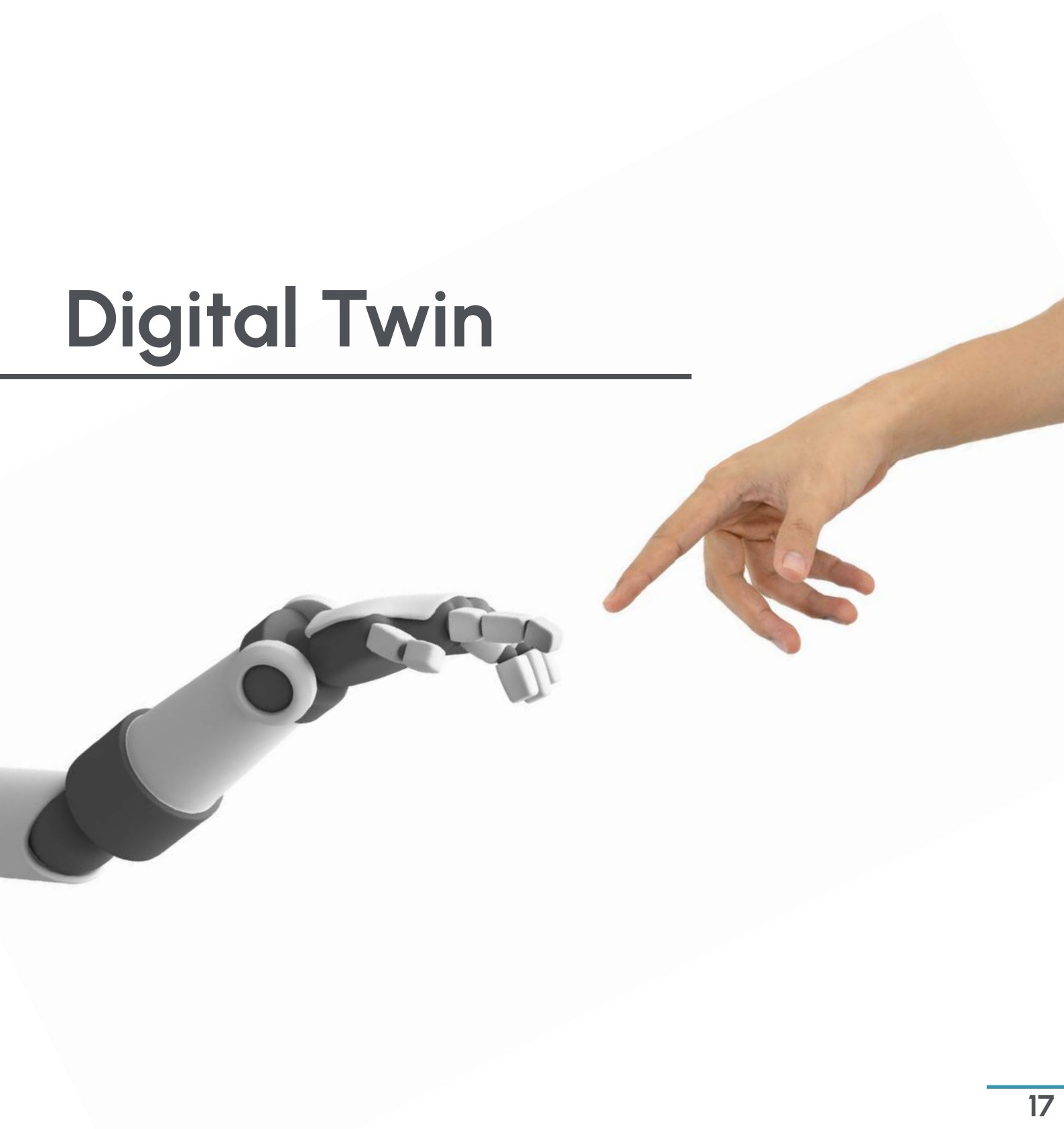
With an eye on sustainability, many organisations implemented targets to reduce, or entirely eliminate their data centre carbon footprints. Using next-gen DCIM tools and software is vital to increase efficiency and and optimise energy use utilisation.

Digital Twin

Key for Accurate Data

Data Centres are complex environments that require accurate management to mitigate risk, manage capacity and help optimise performance.

A true digital twin is absolutely key if you need to accurately see all of your assets across all of your sites to enable effective management of your critical data space.

Essentially, it's a bit like having x-ray vision to empower you with accurate data, reliable and live monitoring and environmental data at your fingertips, all in one place.

Especially important in the era of remote working, the true value of an accurate and reliable digital twin lies in the ability to track and manage your capacity, energy usage and assets across multiple locations and facilities. You instantly gain a window into a global, regional or local view, giving you total visibility of your data centres as if you were there in person.

Assetspire's intelligent 3DCIM solution unlocks smart optimisation of your data centre asset management, regardless of what and where your data is.

With a customisable dashboard monitoring interface and the ability to to pair with Android/IOs mobile devices, you can be sure that the data you're seeing is the latest picture.

Our smart software allows you to optimise your energy usage on particular assets, manage thermal hotspots in a flash and get back on track to meet sustainability and energy conservation targets.
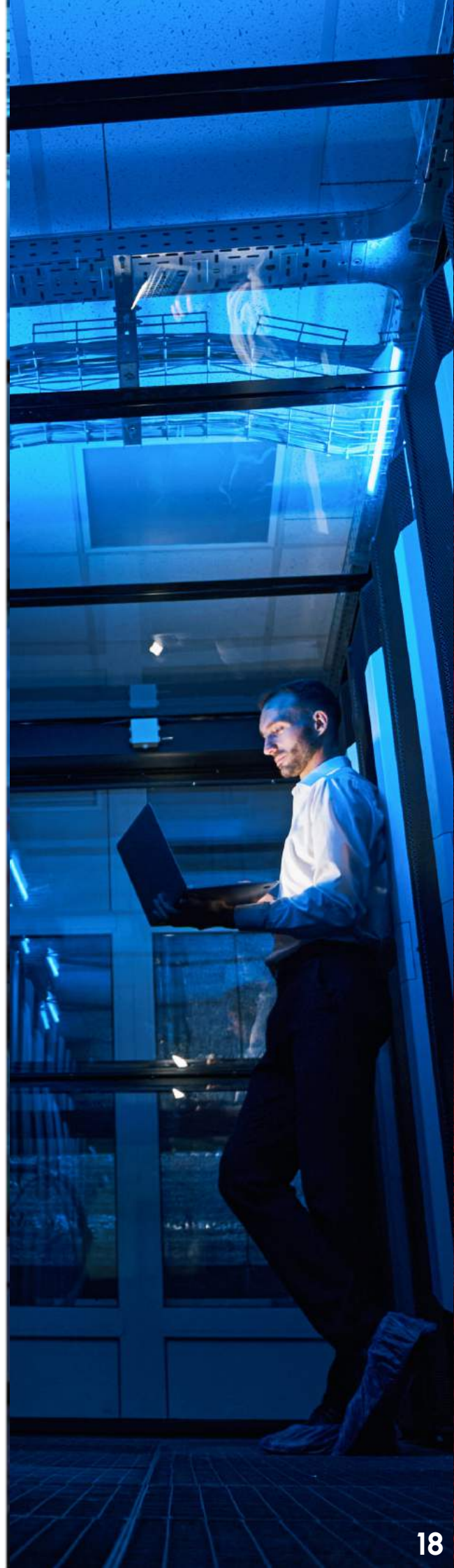
Conclusion

In Summary

In summary, it's vital to ensure your data centre is ready to reconcile business critical demands with the ever increasing challenges around energy consumption, sustainability concerns and rising energy costs. To do so, businesses using data centres need to embrace new methods and technologies to properly be aware of and accurately understand what assets they have - only then can they be managed efficiently and effectively.

Put simply, next-generation DCIM software works - and is vital to help businesses prepare for future challenges. Assetspire can support you in making energy savings and saving costs. Every day our software solutions, hardware, professional services and expertise enable our customers to make important strategic decisions based on accurate, trusted asset data.

Intelligent DCIM keeps providing fast, measurable and real ROI - removing pain points and simplifying and streamlining data centre management, saving your business money, time and resources.

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Get in Touch

Contact Us Today for a Free Demo

Get in touch today and we'll demonstrate how our next-generation intelligent data management software can transform your business quickly, easily and seamlessly.

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