Soben

Data Centre Trends Report 2024

We're a people business

Foreword

By Scott Smyth, Founder and Group CEO

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Leading change

Necessity is the mother of invention, so the saying goes.

For those fighting to meet the demand for new data centres of all shapes and sizes, there's the need to deliver construction projects in the face of multiple constraints. Power problems, skills shortages, soaring material costs and lead times that refuse to return to pre-Covid dimensions are causing the biggest headaches.

So, while other construction sectors are still trying to make the case for productivity and efficiency gains through measures such as increased standardisation, the use of BIM and digital twins and transitioning to greener energy, the data centre sector is just getting on with it. Because it has to.

And, while the surge in AI is wreaking havoc with data centre developers' short-term plans, perhaps there's a flip side to our greater collective awareness about our data use. The perception of data centres among the public and policy makers is starting to shift.

There's a growing realisation that this infrastructure is a vital part of everyday life, enabling everything from transactions to conversations, travel to healthcare. Governments, energy companies, power suppliers and data centre companies need to come together strategically to keep data, the modern life blood of our world, flowing.

In our second annual data centre trends report, our team at Soben share their top ten predictions for 2024 and beyond. While some issues – such as power shortages, green transition and standardisation – continue to impact on the sector, there's the game-changer of AI to contend with, alongside all that brings. Meanwhile, shortages of land are driving new space-saving designs and moves to fresh locations.

Data Centre Trends 2024

Click below to explore each trend.

1. AI disrupts construction
- Exponential growth in AI data centre space
- Higher power demands – by factor of 8
- Mega projects on hold
- Some take the lead with hybrid facilities

2. Leaps in liquid cooling
- More AI, more cooling
- Liquid cooling technology developing fast
- Retrofit costly but some underway
- New builds with flexibility for different technologies

3. Higher power plays
- Power shortages constrain growth
- Developers investing in power infrastructure
- Governments start to take note
- Longer-term planning required

4. New power horizons
- Renewable deals rocket
- Beware new carbon accounting rules
- SMR nuclear on the horizon
- First nuclear units 2027?

5. Fighting for talent
- Wage wars at hot spots
- Upgraded project facilities woo workers
- Long pipelines attract contractors
- More realistic budgeting needed

6. Portfolio-style planning for long lead times
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- Some contracts delayed
- Europe sees some lead times fall
- Early release of funds to mitigate

7. Automotive build style bring speed and quality
- Digital design a must
- Offsite comes into its own
- Cookie cutter approach for multiple projects
- Volume reduces cost of offsite

8. Green funding grows
- SLLs and green loans
- New investors join the sector
- EU Green Deal drives change
- Tax incentives for US states

9. Transaction over collaboration
- GC costs up 40% in some markets
- New players enter the market
- Transactional contracts preferred
- Bigger risk pots needed

10. Cool new locations
- Operators looking outside traditional hot-spot locations
- Land, power, climate key considerations
- Nordics leading the way
- Attention turning to Scotland

At the heart of transition

Our Authors

Soben

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Global data centre specialists

1 AI disrupts construction

Although forecasters may not agree on exactly how much AI will add to demand for the data centre space, they all agree that its contribution will be significant. Investment firm TD Cowen found that 2,100 MW of data centre leases, "driven by AI requirements", were signed in a 90-day period in the US alone at the end of 2022 [1] , and a seven-fold increase over the next three years could be on the cards, according to Schroders [2] .

Data centres built for high-performance computing and AI will be different from their standard cousins. They need faster processing equipment, which requires more power than a standard facility – perhaps eight times more – which, in turn, kicks out a lot more heat, requiring liquid cooling and its increased power demands.

Exactly what this new generation of data centres will look like is not yet clear. *"Everybody sees it coming, but nobody is sure where they want to build, how they want to build, where they need space,"* says Soben director Pieter Schaap. *"So, they are all waiting for the hyperscalers to make the first move."*

Following Facebook

Facebook owner Meta Platforms has gone public with its plans – or at least some of them – after news that several of its data centre construction projects were on hold. It is hedging its bets by developing hybrid facilities which have both traditional and AI processing power, the first of which is under development in Texas [3] .

Other players are also changing their plans mid-construction. Some projects are on hold, others are having a swift upgrade of fibres to deliver higher data speeds while still being built. In Norway, AQ Compute changed its cooling specification part way through construction to accommodate an anchor tenant [4] .

One of the added complications in planning data centres that can cope with generative AI is that there are two different phases to it: training and inception. Data centres for AI training will be larger with more emphasis on cost and energy efficiency, and could perhaps be located in cooler climates, where renewable energy is plentiful. Meanwhile, more edge data centres could be needed close to cities and industrial areas for the inception phases when AI is being deployed.

> *AI is very much up in the air. I doubt we will see lots of dedicated AI construction activity in 2024 but there will definitely be more in 2025.*

Pieter Schaap
Director

2 Leaps in liquid cooling

One of the hot topics in AI data centres is cooling. More specifically, what tomorrow's cooling technologies will look like.

Cooling technologies, including the types of fluid used in the various systems, will advance fast this year – which will itself create tension for those looking to procure equipment early for upcoming projects. Some developers are investing more upfront to future-proof their centres by installing additional pipework.

The hard-working, heat-producing graphics processing units (GPUs) needed in AI data centres will require liquid cooling rather than air cooling. There are various types: rear-door heat exchangers, direct-to-chip liquid cooling and immersion cooling and other more innovative types under development.

The most commonly deployed liquid cooling systems now are rear-door heat exchangers, where the rear doors of a rack are replaced with a liquid heat exchanger. Direct-to-chip systems, where cold plates sit on top of the elements of the board that create the heat are also being installed in some facilities.

Immersion cooling, where servers and other components are submerged in a dielectric fluid, is the most energy efficient form of liquid cooling but, as yet, rarely deployed. GlobalConnect announced in February 2023 that it could roll out such technology to its 16 data centres in Denmark, Norway, Sweden, Germany and Finland, depending on customer demand [5]. In the UK, telecoms giant BT announced in September that it was trialling several liquid cooling systems including full immersion of networking servers [6].

Built-in flexibility

Updating existing data centres so that liquid cooling can be deployed is likely to be costly, as the additional plumbing needed could be difficult – or even impossible - to install. Nevertheless, it is happening. December 2023 saw the announcement from Verne Global that it had installed liquid cooling in some parts of its underground data centre 'The Rock' in Finland.

Some developers are choosing to build in flexibility for different forms of cooling. Kevlinx, which broke ground on its first data centre in Brussels in September last year has allowed for multiple cooling options for the 32 MW facility. Its data hall has indirect evaporative cooling with options for chilled or condenser-based system if required [7].

> "
> *Technology is changing, but you can only work with what you know at that point in time. You have to press the button. Be decisive but be aware of the risks, design a data centre that is adaptable*

Robert McQueen
Operations Director – Consultancy EMEA

③ Higher power plays

Ask almost anyone what the biggest issue facing data centres will be in 2024 and the answer is: power, or rather the lack of it. It's a problem for data centre hubs in North America, South America, Europe and Asia Pacific.

However, there are signs that some Governments are starting to recognise that a more strategic approach to data centres, power generation and transmission issues and energy transition is necessary.

Power constraints in US data centre heartland Northern Virginia is well documented. But hot spots in other regions are facing the same issue. Projects in Chicago, for instance, have been delayed due to a lack of power.

Soben director Mark Smith, based in Denver, says that short times between the final go-ahead for a project and start on site are exacerbating power supply issues. *"Clients should be thinking 10, 15 years down the line. They need a more structured approach,"* he says.

In Latin America almost all the main data centre areas are struggling for power, reports Cesar Virgen: Queretaro, Monterrey and Tijuana in Mexico, Sao Paulo in Brazil, Santiago in Chile and Bogota in Colombia. One of the difficulties developers face is that, with the exception of Chile and Brazil, the state is the power supplier for countries in this region.

Investing in power

In Europe's FLAP D markets (Frankfurt, London, Amsterdam, Paris and Dublin), it is the same story. Even some secondary markets are struggling.

"Here in Berlin, there's very little availability of power on the grid," says Soben director Peter Alexander. *"Forecasted data centre projects in Berlin will be providing additional power and substation upgrades up to 500MW over the next three years. This additional critical spend for infrastructure upgrades shows the appetite clients have in the current marketplace"*.

Europe's power distribution network needs significant investment, says Soben operations director Robert McQueen. *"The biggest problem now is transmission. The grid is insufficient across Europe for what it needs to do and the loads it needs to carry. It needs a massive infrastructure spend from governments."*

More and more operators are signing 10- or 20-year power purchasing agreements (PPAs) with renewable energy suppliers (see next section), but that doesn't help right now. On the ground, the increased demand for power from AI combined with the risk of power outages, means that some owners are ordering extra generators mid-construction.

3 Higher power plays

New locations

Power shortages in the established data centre areas will also see activity shifting to secondary markets which have access to power. Madrid, Rome, Barcelona, Zurich, Warsaw and Vienna are all tipped for strong growth [8].

In North America, power availability in Reno, Nevada and Charlotte, North Carolina make them attractive options [9]. And activity in Canada is ramping up with recent news such as Stack opening the first 8MW phase of a 656MW campus in Toronto in September 2023 and Microsoft's November 2023 announcement of $500m investment in Quebec [10].

Governments listening

There is heartening news from Mexico. Here, the major data centre players banded together to form the Mexican Association of Data Centers (MEXDC) which talks to the national and state governments about the challenges the industry is facing. The message has got through, says Cesar Virgen:

"At Mexico Connect, the Queretaro state government was saying that they were aware of the issues around power and that they were willing to make commitments to solve those problems. This is the first time I have heard a government in Latin America say that."

Governments in other markets that had called a halt to data centre construction are also changing their approach. Singapore, having called a moratorium on data centre projects, is now allowing four data centres to be build in an initial pilot phase. In Ireland, where an unofficial moratorium has been operating through the planning system, Microsoft gained planning permission in July 2023 to build a €100m backup gas power plant for its Grance Caste campus – despite concerns about elevated carbon emissions [11].

> **"**
> *The Queretaro state government has signalled that they understand the importance of the data centre industry and that they are ready to find a way to tackle the power shortages there."*

Cesar Virgen
Senior Cost Manager, Americas

④ New power horizons

The combination of power shortages and ESG pressures is accelerating the shift to renewable energy. In the short term, we will see a surge in power purchase agreements (PPAs). In the medium term, nuclear power will become a viable option.

PPA deals done in Europe in 2023 include Equinix signing up with Sonnedix in Portugal for a ten-year solar energy deal [12]; Google and Eneco agreeing on a 10-year deal in the Netherlands for energy from two windfarms[13], and Engie in Germany will be supplying solar power to Digital Realty from a solar park in Branden[14].

In Africa, Orange Côte d'Ivoire signed deals with SolarX Group for solar power for two data centres in Yamoussoukro, Côte d'Ivoire and Ouagadougou, Burkina Faso. Africa Data Centres also made a 20-year PPA with DPA Southern Africa[15].

However, experts warn that the way greenhouse gas emissions are calculated could change so that renewable energy projects in cleaner grids are given a lower sustainability weighting than those in dirtier parts of the grid. These risks will affect pricing – and data centre operators are being asked by energy companies to share some of them[16].

While the major data centre players have the expertise and resource to manage these new risks, smaller players may need to exert more caution. The advice is to look for renewable energy providers who have projects close to the data centres they are linked to and to sign up for shorter PPA periods.

Nuclear futures

Looking further ahead, the prospect of small modular reactor (SMR) nuclear plants supplying power to data centres looks hopeful. At the beginning of 2023, the US Nuclear Regulatory Commission certified a design from NuScale [17], although hopes were somewhat dashed in November 2023 when the first planned commercial NuScale SMR project in Utah was scrapped on economic grounds[18].

Meanwhile, other companies such as Oklo, BWX Technologies, Kairos Power and X-energy [19] are developing business models where SMR units can be supplied to industries such as data centres through PPAs. According to Oklo, it is in discussions to provide up to 3.2GW of power to the data centre industry by 2027 through units supplying up to 50MW.

The UK Government is keen to encourage SMRs too, with Rolls Royce planning to build a raft of plants in its home market and in the Netherlands [20]. The UK is also courting US suppliers, with Last Energy announcing a deal with them to sell 24 SMRs to the UK in 2023 [21].

Data centres fuelled by hydrogen-produced power are even further away on the horizon, with the huge issue of supporting infrastructure a vexing problem that few countries have even started to address. In Singapore, Equinix is working with the National University of Singapore to investigate hydrogen fuel cells[22], while in Ireland, SK Group and Lumcloon Energy are looking to develop fuel cells to power a data centre, initially powered by natural gas with the possibility of an eventual transition to hydrogen[23].

Aurora fission power plant by Oklo
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5 Fighting for talent

Alongside power constraints and long lead times, a shortage of people and companies with the right skills and experience threatens to limit the number of data centres that can be built. There's a fight on for general contractors, electrical and mechanical contractors, tradespeople and construction management professionals.

The war for talent is ferocious, with people jumping from company to company as the job offers get ever more attractive. *"There is a lot of poaching going on and prices are going up. There's an increased cost for management,"* says Peter Alexander. *"The subcontractors are in high demand and they, in turn, have to attract labour and are paying more for skilled labour."*

"It's going to be a big challenge for the next couple of years, especially with all the scale the big players are bringing," predicts Cesar Virgen who is working on data centre projects in the US and Mexico. *"Many of these data centre locations are in the middle of nowhere, so persuading people to go and work there requires incentives in the first place."*

At site level, savvy data centre operators are working hard to create more attractive work environments. Contractors and subcontractors, and their workers, must be lured to site from neighbouring states or countries. Upgraded canteens and facilities – as well as better wages, bonuses and per diems – aim to tempt precious workers.

At contractor level, long pipelines of work and bigger packages are the incentive.

Mark Smith reports how one owner has packed two projects together to provide a hefty $100m deal to tempt in contractors. He warns against going too far with package sizes, though. *"We want contractors to be bringing their A team. If they get overstretched, that's not going to be the case."*

> "
> *We're giving clients up-to-date information at the start of projects so that when they're going for funding, they're using realistic figures."*

Mark Smith
Director - U.S. & Canada

6 Portfolio-style planning for long lead times

Multi-project planning

Although lead times for most equipment and materials are not as long as they were at the height of the Covid pandemic, they are still causing problems on both sides of the Atlantic. The answer for developers with multi-centre construction programmes is to take a more strategic approach.

From Atlanta, Soben's Lead Project Manager Martin Brown reports that there are still long lead times on some electrical equipment, critical power systems, mechanical equipment, IT equipment and structural elements including precast concrete, structural steel and roofing.

Equipment delays are even causing some projects to grind to a halt elsewhere in the US. *"It is costing tens of millions of dollars because there are contractors sitting there twiddling their thumbs, effectively being paid to do nothing,"* says Soben director Mark Smith.

In Europe, while most lead times for many items have fallen, major equipment such as generators, transformers,

and other big items are all on a minimum of 20 months' lead time. *"It's something we have to deal with at the land purchase stage,"* says Peter Alexander. *"The trouble is that no matter who is building the data centre, they all generally go to the same suppliers for key commonents such as transformers where manufacturing slots need to be secured to ensure timely delivery."*

Owner furnished contractor installed (OFCI) items, where the project owner buys critical equipment and materials directly from the suppliers, was a practice that started with the major players but is now used more widely. The idea is that data centre owners set out a pipeline of projects and orders for several years so that the supplier can plan production and give their OFCI data centre clients priority over manufacturing slots.

However, without manufacturing resource ramping up significantly and quickly, OFCI can't solve the problem of insufficient capacity. Clearly, the bigger hitters will get priority over their smaller counterparts.

Data centre companies are countering this challenge by releasing funds and ordering equipment early, reports Soben associate director May Zor-Temmink. Some are storing items on sites in other parts of the country where construction is already underway. Others are taking a more portfolio approach to their projects, 'robbing' equipment from a project that may be delayed by planning to keep another one advancing.

Martin Brown reports that some of the larger subcontractors are now preordering equipment from suppliers in anticipation of being awarded contracts to reduce lead time. *"These preorders sometimes can be the difference between being awarded a contract or not because one subcontractor can get material sooner than another, which can improve the schedule for a project,"* he says.

With so many different items to coordinate, all with different lead times, and with multiple projects to juggle this can be a tall order. But help is at hand. Some companies have started working with Artificial Intelligence trained to look at schedules and come up with different options to reduce the duration of construction [24].

> " *Long lead times are still an issue. Early release of funds to purchase long lead items has been the remediation strategy."*

May Zor-Temmink
Associate Director - U.S. & Canada

7 Automotive build style brings speed and quality

The need for speed to market combined with long lead times on some equipment and materials, and shortages of skilled labour are driving the sector towards digital construction, early procurement of key items at scale and more use of offsite elements. It's what some industry reformers have been suggesting for decades: a 'design for manufacture and assembly' (DfMA) approach which is more akin to automotive engineering than traditional building.

"Prefabrication started off as a far-fetched idea, but now this is the way the industry is going," says Martin Brown. *"Contractors can increase their profit margins by using less expensive labour, and assembling material offsite in a controlled environment can reduce some of the inherent safety concerns and provide increased productivity."*

Offsite approaches improve quality control, says Pieter Schaap, since elements are manufactured in a controlled environment. This works well for remote or emerging locations, such as Africa, where there may not be sufficient trained resource on site.

And the increase in demand has seen prices fall, Pieter Schaap says: *"It is a bit more expensive than traditional construction, but not a lot anymore because there is a significant amount of volume going into the shops."*

Some colocation providers are using modular construction to scale up in phases. Space is added as tenants are secured. *"Modularisation allows 100% occupancy rates,"* says Schaap. *"It's not just the transformers, switch gears and generators, it is also more common that white space has been containerised."*

What the early purchase of more and more elements, combined with a greater use of offsite means is that digital design – or BIM – becomes a necessity. *"Projects are fully coordinated virtually before they are constructed in the field, so subcontractors that will be awarded scopes of work are required to participate in the BIM process,"* says Brown. Awarded subcontractors feed their designs into a federated model so that interfaces and clashes can be reviewed and resolved prior to breaking ground.

From there, it makes sense for the same design to be replicated in multiple locations with updates only being required for site-specific needs, geographical accommodations, and coordination of scopes of work below grade. And this is indeed what some companies are doing.

> "
> *"If you are building multiple data centres, it makes sense to have a cookie-cutter approach."*

Martin Brown
Lead Project Manager - U.S. & Canada

8 Green funding grows

In 2024, we will see new investors and funders developing an appetite for sustainable data centres through sustainability-linked loans (SLLs) and green loans. And that means, for many data centre developers, that sustainability makes even better business sense than ever.

Some of 2023's deals illustrate the trend. In August, ESR secured a HK$1.6 billion ($205 million) SLL to convert a former cold storage facility in the Kwai Chung district of Hong Kong. November 2023 brought the news that Digital Edge had secured a $335m green loan for the first phase of its 100MW project in Seoul, SEL2. In December, Chinese data centre company GDS railed MYR1.27 billion ($270m) in green financing to complete plot 1 of its Nusajaya Tech Park data centre in Johor, Malaysia[25].

Both SLLs and green loans have been designed to drive sustainability improvements to those who secure them. And they also allow a wider range of potential investors to fund data centre projects.

Some companies are ahead of the curve. Switch Data Centres in the U.S. has been deploying 100% renewable energy in its data centres since 2016 and reports net zero carbon for all its scope 1 and 2 carbon emissions.

Equinix has set itself the long-term goal of using 100% renewable energy, reaching 95% in 2022. It signed its first two PPAs in 2016 for wind in Texas and Oklahoma, followed by three PPAs in Finland in late 2021 and 2022. In March 2023 it announced that it was adding five PPAs in Spain and then its latest one in Portugal.

New regulations

There is legislative pressure too. The European Union's Green Deal, aimed to drive down carbon emissions has spawned a raft of legislation. The Corporate Social Reporting Directive (CSRD), aimed to improve the quality of environmental and social governance (ESG) reporting, came into force in January 2023.

The Energy Efficiency Directive (EED), which requires data centres over 500kW to report on energy and water efficiency data, will come into force in May 2024.

Some EU countries are pushing ahead harder with energy efficiency. The German Energy Efficiency Act says that from 2026 new data centres must have a PUE of 1.2.

In the UK, the Government is pushing to use waste heat from data centres in district heating systems with £36m of funding for a scheme to hook up 10,000 new homes and 250,000 m2 of commercial space[26]. This follows the Netherlands's lead where 50,000 homes are either already connected or being connected through current projects[27].

In the U.S., states such as Virgina[28] are looking at alternative ways to restructure tax incentives, for instance to encourage the use of renewable energy. The US's Department of Energy is funding 15 projects which aim to produce energy efficient cooling systems[29].
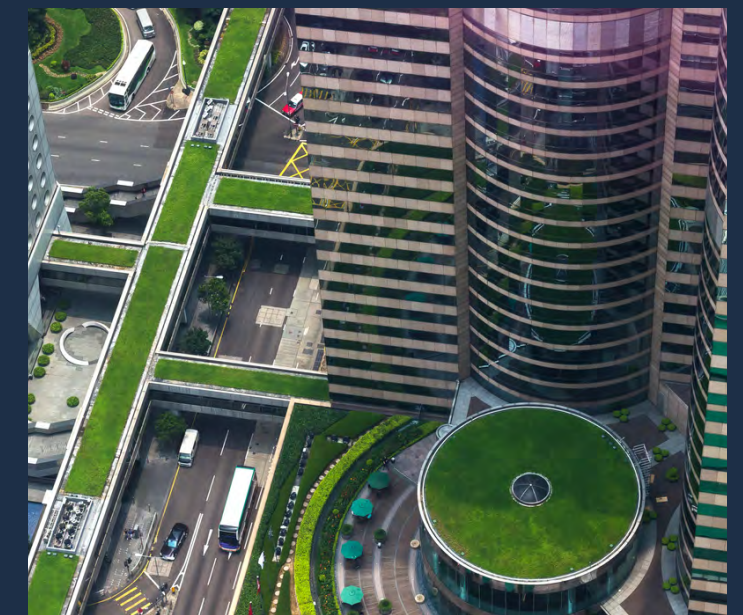
> " *Equinix, the world's biggest colocation provider, has signed green power purchase agreements for 96% of their power. That's massive, a global player with 15,000 people working for them making such a sustainability push.*"

Pieter Schaap
Director

9 Transaction over collaboration

Last year collaborative contracts were on the cards. This year there's a definite shift to more transactional contractual relationships.

There are two reasons for this. First, the extensive 2023 layoffs by many of the big technical companies impacted on their development departments, leaving them very lean in places without the resource to manage the collaboration process. Second, the demand for general contractors means that there are newcomers to the sector who don't have the experience to bring to the table for collaborative delivery.

"More experienced general contractors are positioning themselves differently and are trying to increase their margins, so costs are going up," says Pieter Schaap. *"Clients who cannot work with the big general contractors are looking at alternatives."*

Contractor costs up

Mark Smith reports that general contractor contract costs are up by 30% or even 40% in Wyoming, U.S. *"We're trying to educate the clients about that at the beginning,"* says Mark. *"Rather than keep going back for more funding, we're suggesting they carry out a QRA – a risk register – and then put sufficient contingency into the risk pot."*

In Europe, data centre developers are looking outside their established circle of general contractors with data centre experience. *"They're talking to some of the bigger contractors, who haven't traditionally been interested in this sector,"* says Peter Alexander.

Two recent moves in the UK see newcomers enter the sector. Contractor Glencar, which more often works in the industrial and commercial sectors, won its first-ever data centre project with Vantage Data Centers for a project near Heathrow[30]. Meanwhile, Strabag UK, traditionally a civil engineering contractor, has recruited 15 senior employees from the Buckingham Group, which went into administration in September 2023, with the aim of targeting building projects including data centres.

" *A lot more contractors are coming to the party, because they see the size and scale of the opportunity, and the potential for margins not available in other sectors."*

Peter Alexander
Director Data Centres - EMEA

⑩ Cool new locations

With the rise in demand for AI and high-performance computing (HPC) data centres augmenting the already exponential demand, operators are looking outside the traditional hotspot location. Low latency AI data centres will need to be close to urban areas but those used for training AI algorithms could be located almost anywhere.

Ideal locations would have access to land, plentiful renewable energy, cooler climates and a welcoming business environment. Access to established or planned district heating schemes is also a benefit, offering the opportunity to further lower a data centre's carbon footprint.

The Nordic countries, particularly Sweden, Norway, Finland and Iceland are keen contenders. Sweden's Department of Energy, Business and Industry (EBI) has forecast that the data center construction market in the Nordics will increase from $1.6 billion in 2022 to $2.6 billion in 2028 [31].

Norway's Government already offers tax breaks related to power. The Swedish Government has said that it is looking to create an attractive environment for would-be data-centre investors and developers too.

AQ Compute was set to go live with its first data centre in Hønefoss, Norway at the beginning of 2024. Set up to service HPC and AI customers, the data centre is close to three hydro power plants, and AQ is finalising agreements to feed waste heat into nearby district heating schemes [32].

Microsoft stated its intent to create a new data centre region in Finland in 2022 [33]. And in June 2023 came the news that it had acquired a site in Vihiti, which will be developed alongside sites in Espoo and Kirkkonummi [34].

Iceland received a boost in March 2023 when a new subsea high capacity fibreoptic cable between Ireland and Iceland went live; it has a similar connection to Denmark [35]. It also offers 100% renewable energy, and not the fluctuating kind, with 70% coming from hydropower and 30% coming from geothermal. *"With all of this opportunity, there has also been a conscious effort to reduce impact on the surrounding communities by not only increasing awareness for sustainability but also in efforts to design data centres for a more aesthetic and less disruptive approach,"* says senior project controls manager, EMEA, Rachel Stritz.

Scottish story

Scotland, in the North of the UK, has thrown its hat into the ring as a suitable location for new data centres. A technical study, updated in 2023, identifies 20 potential locations for data centres, all of them close to renewable energy.

In addition to its renewable power generation, largely from onshore and offshore wind, Scotland benefits from a relatively cool climate, and a plentiful supply of land. The Scottish Government is looking to build a data centre market, publishing an action plan for green data centres back in 2021 alongside a new piece of legislation, The Heat Networks (Scotland) Act 2021, aimed to accelerate the deployment of district heating in urban areas.

Power providers are gearing up too. Scottish electricity network provider SSEN is investing £10bn to develop its onshore transmission infrastructure by 2030.

Rachel Stritz
Senior Project Controls Manager - EMEA

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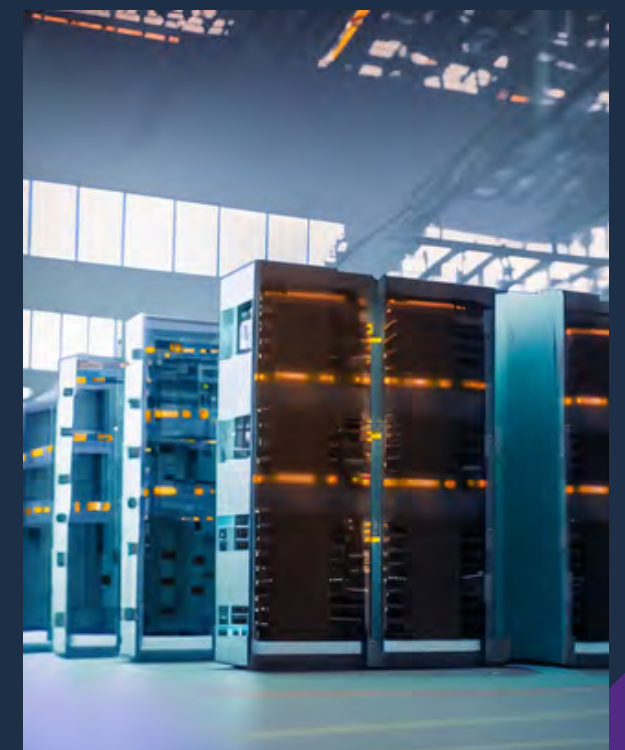
At the heart of transition

The data centre market is a microcosm of the world and the transitions that are currently underway. The next ten years will see a huge shift to digital economies globally and – at the same time – those economies must work out how to transition away from fossil fuels to renewable energy sources.

Of course, digital growth, and the explosion in data use, means that the data centre sector must grow and diversify to meet the new and different needs of societies. The next 12 months will be challenging for all echelons of the sector as demand for space continues to ramp up while constraints on power, land, skills and supply chains impact in markets around the world.

As the swift increase in the use of AI has demonstrated, changes to the way we use data mean that data centres must adapt accordingly. In the case of AI, this means higher demands on power for processing with rising cooling requirements driving new developments in technology and new formats for data centre designs.

Already we see the sector rising to these multiple challenges with alternative power sources, new cooling technologies, widespread use of BIM and digital construction and an increased deployment on standardisation through offsite elements. The major players are leading the way, but all must follow if they are to make the most of limited skills and resources.

The uncertainties around issues including power shortages, rising costs of labour and materials and the speed of technology change make planning for construction projects more challenging than ever. Our advice to our clients is to conduct rigorous risk analysis and management exercises as early as possible and then throughout the project life, to take a more strategic approach to tie in contractors and suppliers, and to allocate budget with the most up-to-date information available – rather than to assume that the same historic patterns will continue.

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Global data centre specialists

Soben is the industry leader in innovative data centre construction consultancy. Our global data centre specialists provide construction consultancy solutions to the world's leading data centre providers and tenants. Our services range from cost, project and programme management to strategic advice around sustainability, procurement and risk.

To date Soben has delivered over $18 billion and 3000MW of projects across six continents. We are currently working with the global leaders in hyperscale and colocation data centre development on some of the world's largest, most complex schemes.

About Soben

Soben offers something different: world-class construction consultancy, paired with hands-on commercial experience.

We increase certainty in our clients' investments through cost, schedule, risk, and project management. With a track record of successfully delivering major construction projects, we pride ourselves on going the extra mile. And we always deliver on our promises.

An obsessive commitment to excellence, and forensic attention to detail are the cornerstones of our culture. They're how we help our clients deliver on time, on budget and with certainty, every time.

We're a people business
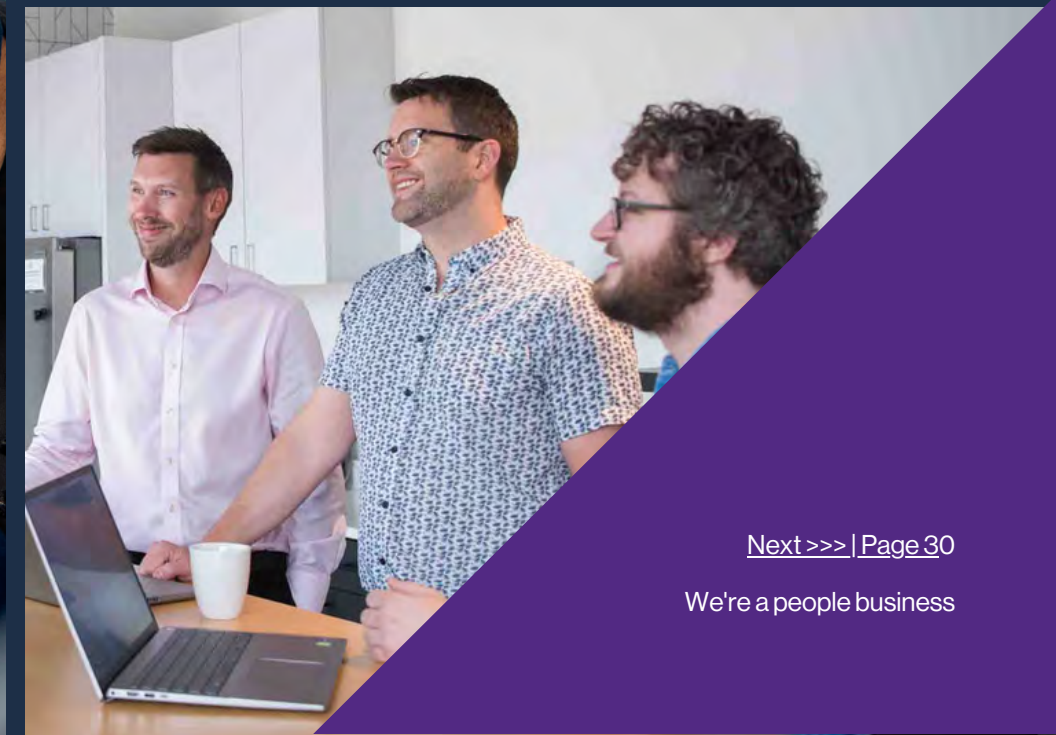
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