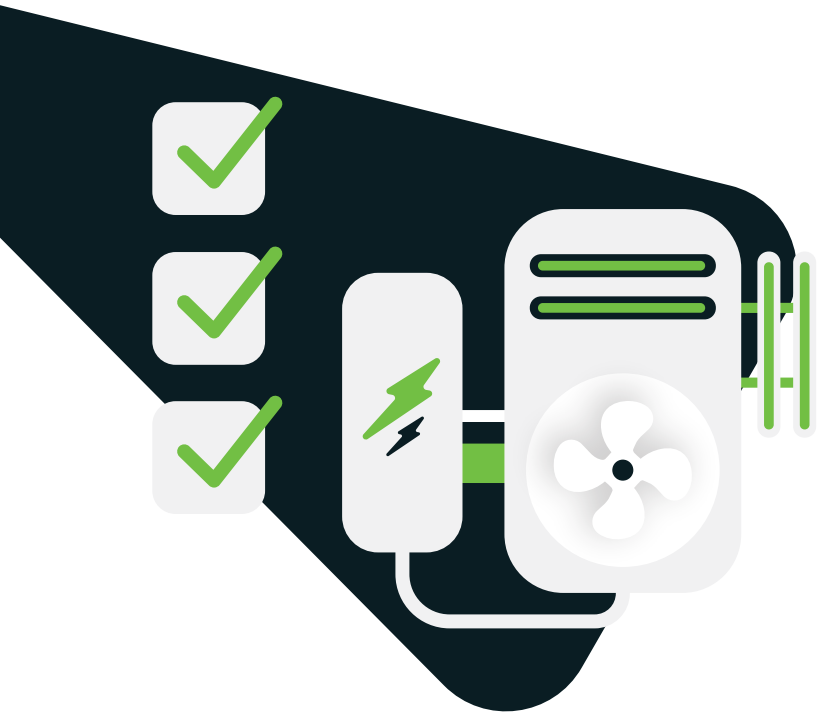
CUSTODIAN
DATA CENTRES



Data Centre Checklist

Your guide to selecting the right Data Centre

Table of contents

Introduction

Selecting a Data Centre is an important decision for your business. Simply put, your business, your data, your customers and your reputation all depend on it.

Placing your trust in the wrong Data Centre could lead to issues with poor connectivity, power outages, limited growth/scaling and even physical security breaches. Selecting the right Data Centre will provide solid service levels and peace of mind for years to come.

Data Centre facilities come in all shapes and sizes, offering various packages combining power, support, expertise, network connectivity and more.

The colocation market is exploding. A recent UK Data Centre market report revealed that the UK is leading the Data Centre services market in Europe and comprises over 250 operational colocation Data Centres. By 2025, the market size is expected to represent an impressive 1.18 million square feet of active colocation space.

With this vast amount of choice, how do you pick a Data Centre that meets your business' needs – both now and in the future?

We recently put this question to our own Data Centre customers; to establish what was important to them when they selected a Data Centre. Based on these results, we've identified the key areas to consider when choosing a Data Centre (or multiple Data Centres) for your business.

Let's take a look.

1. Location

Location is seen as one of the most important factors to consider when choosing a Data Centre.

However, selecting the right location for a Data Centre is more complex than simply finding the one closest to your office.

When assessing location, you should consider the road and rail networks to ascertain how easily, quickly and cost effectively a member of staff from your company can reach the Data Centre if physical access to perform maintenance or upgrades is required. A Data Centre that is located inside a major city, such as London, can incur significant travel costs as well as suffering from delays accessing the site via the road or rail networks.

Additionally, built-up areas can often lack viable parking options, which is particularly important for engineers brining equipment to site. You should check for free parking and loading-bay availability to ensure the potential providers meet your requirements and will not cause you to incur additional delays or charges as you perform your rollout.

Geographical diversity is another factor to consider, especially if you are looking to place equipment into multiple facilities. Some industries dictate that their primary and disaster recovery sites must be a certain distance from one another. If you have to select a Data Centre that is located a significant distance from your offices or another existing Data Centre site then this must be considered early during the selection process. It is also worthwhile checking with potential providers if they operate additional Data Centres or have space within other facilities which can be cost-effectively linked together remotely to help you achieve a geographically diverse solution.

Find out if the provider offers any kind of first line support to resolve any minor issues and maintenance tasks – such as server reboots, checking alarms, swapping a hard drive or even a cable patching check. This way, you don't necessarily have to send someone out from your own team on a lengthy round trip at 3AM for a quick task. Additionally, check if you can have 24/7/365 unescorted access to your racks without incurring 'escorting' fees or other charges. So, if you really do need to get in, then you can at any time, day or night.

Data sovereignty is a country-specific requirement where data collected and processed from one country must remain within its borders. So, if your business (or that of your clients') is affected by any data sovereignty concerns, be sure to check for the necessary compliance. This may include both geographic location and the ownership or registration of the business from which you are purchasing your colocation services. Ensuring that they do not then process your data outside the UK.

Sovereignty should also be checked with any ancillary services, such as backups, hosted storage and cloud solution offerings which may be included with your colocation solution.

In summary, whilst several factors can often be negotiated / engineered into a solution later on, geographic location cannot. So, identifying the potential locations for your colocation space first, can help reduce the overall number of potential vendors to evaluate. Leaving you with more time to focus on the remaining elements.

Key points to consider:

- How far do you want or need to be from your Data Centre?
- How often will you require physical access?
- Is the facility located in a traffic hotspot?
- Are intelligent remote hands available 24/7?
- Is parking and unloading available and free/easy to access?

2. Connectivity

After location, network connectivity at your Data Centre partner is often fundamental to the decision-making process. It may not be crucial (particularly if your core business is data processing and storage, not distribution for example) but in all cases it is usually critical that it remains online at all times.

So, ask about network capacity, data transmission speeds and latency, and any connections to the major communication Points of Presence (PoPs) to ascertain performance level and connection speeds.

If your requirements are for Point-To-Point links between your offices and your equipment, or between your equipment and your customers premises, then you need to check which carriers are available 'on-net' at the facilities you are examining. You also need to check which other Data Centres and communications locations the Data Centre has within its own network. You will be able to easily access carriers within these other on-net facilities also, so check with the provider to see where their network spans.

It is advantageous to seek out a Data Centre which owns and operates its own carrier network as well as having independent carries on-site. This is known as being 'Carrier Neutral' and it means you can select services from any providers, including the Data Centre owner itself, based entirely on your own requirements.

Some Data Centres are limited to just a few network carriers, and some do not even run their own networks at all - so it's vital to spend some time learning about the connectivity options available.

If your connectivity requirements are based more around the global internet (rather than point-to-point requirements) then IP Transit capacities and network peerings are the elements that you will need to investigate closely. Partnering with a Data Centre provider who can offer a diverse, highly peered network with multiple paths can improve connection speed and help your business stay online. It's therefore important to know the number of direct peerings your Data Centre has to other ISPs, as well as any direct connections it has with Tier 1 Internet Service Providers.

Cloud connectivity is another major factor to consider when selecting a Data Centre today. As more and more organisations adopt a hybrid approach to cloud, you need to establish if your provider can offer dedicated connectivity between the Data Centre and the major public cloud providers, such as Azure, AWS, Oracle and Google. Direct connectivity (instead of reaching them via the public internet) is more secure and significantly more efficient both in terms of latency/throughput as well as commercially.

You may need to consider whether specialist connectivity options are available too. If your business is in the Health and Social Care sector, it's vital that your Data Centre can provide access to the HSCN network to ensure all Patient Identifiable Data is encrypted and remains secured on UK soil.

If you need a wide-area network to link together elements of your project, or even to join up a series of remote customer sites, then it's critical that you discuss this with your potential facilities to ensure they have a robust and scalable network to work with you on this.

Key points to consider:

- Is the facility carrier-neutral?
- Where are their Points of Presence?
- How many direct peerings do they offer?
- Which carriers are available to be delivered directly to your rack space?
- How many direct connections to Tier 1 ISPs do they have?
- Can they connect you to the major public cloud providers directly?

3. Resilience

The most important role of a Data Centre is to keep your business-critical services up and running. So, reliability looms large when assessing the potential for a new facility.

Downtime can be expensive in both financial and reputational terms; so, Data Centres must employ an extensive set of protective measures to ensure that all of the critical infrastructure services are always available to you.

If any of the key services are offline then there is the potential for business disruption to occur. The key services are considered to be:

- Power
- Cooling
- Connectivity

Power resilience varies significantly between different Data Centre operators, please see our other Whitepaper on Truly Diverse Power systems for reference. When reviewing the options available to you from a colocation provider, be sure to confirm which level of power resilience or diversity is available to your rack space. Critically there is a significant difference between 'Resilient' and 'Diverse' – mostly since 'Resilient' often means there are still single points of failure. Whereas 'Diverse' means that power paths are 100% separated from the power source all the way to your rack.

A power outage of just 1 second in duration can often impact services for many hours, sometimes even days, as not all devices may recover after being power cycled. Also, software such as large database engines may require manual intervention to recover their states.

Conversely, whilst cooling issues lasting a few seconds will go unnoticed, it is just as important that cooling availability remains high and resilience to faults within the cooling infrastructure is very high. Large plant/coolers/HVAC systems are often out of service for long periods of time when they fail or require servicing, so it is critical that the cooling infrastructure is both resilience and concurrently maintainable. This also includes the availability of the upstream power supplies which keep the cooling systems online. These must be generator and ideally UPS backed so that even during an unplanned grid supply outage there are no significant 'peaks' in supply air temperature, or air-starvation events if fans go offline for a few minutes.

Just like with the power resilience, you should query exactly how the cooling systems work during both planned maintenance and unplanned outages.

With public facing services, or site-to-site links playing a key part in your solution - if your critical equipment

is powered and cooled but has no connectivity then it may as well be offline from the end-user perspective. As such, network design, resilience and fault-tolerance must be examined heavily across any potential new Data Centre you are considering.

If the facility has their own network, you should ensure this has adequate path diversity and that you get a minimum of two feeds from different physical equipment in different locations for your key services. You should also ask about how the provider's equipment is powered and whether it also has power supply diversity.

If the Data Centre you are considering does not have a network of its own, or you are using other providers who are on-net there, it is equally important these same questions are asked of the other carrier(s). Their equipment should also be diversely powered and hosted within different parts of the facility. If you are using multiple providers, ensure they are not all in the same carrier suite or meet-me area.

Lastly, the auxiliary services and protection features such as Fire detection, Fire Suppression, HVAC systems monitoring and network analysis tools should be queried. It is critical that these systems are all actively monitored, use the latest approved methods and that both a reactive and proactive management system is in place to keep on top of any maintenance and unexpected events which may occur. A 24/7/365 Operations centre is a must, and dedicated engineering staff should be available at all times for electrical, cooling and networking infrastructure works.

What makes a resilient data centre?

- A demonstratable uptime history with a robust SLA
- Truly diverse 2N power delivery
- N+1 and concurrently maintainable cooling infrastructure
- Dedicated dark fibre network with fast connectivity
- 24/7/365 system monitoring and onsite technical support
- Appropriate air conditioning for all Data Centre equipment
- Smoke, fire, humidity and flood detection, such as raised floors

A data centre provider and their customers are always bound by a Service Level Agreement (SLA), which guarantees maximum network uptime, power service, cooling and temperature stability. Most data centres provide SLAs as part of their contract, and these should be evaluated carefully before making your final decision.

4. Security and Compliance

Another critical factor to consider when looking for the ideal Data Centre, is the physical security.

Data Centres house expensive equipment – but often the value of your data and services running on the hardware far exceeds the purchase price of the equipment itself. You must ensure that your equipment and your business-critical data are protected by robust physical and electronic security measures at all times.

"The physical security of your kit must be watertight."

Your chosen Data Centre should have perimeter security with suitable locks, video monitoring systems, and even "round the clock" manned guard stations so you can rest assured your equipment remains safe 24/7/365. Find out how they manage authorisation, restricted areas and whether they keep records of who accesses their site and when. Also, look for information concerning security audits like ISO27001 compliance to get a comprehensive view of their overall security stance.

There are many other accreditations to demonstrate physical security, processes and people at a Data Centre, such as PCI DSS, Cyber Essentials and more. Ask to see these certifications, and take a moment to talk to the team and find out if staff are vetted and DBS checked, and discover how well they understand and adhere to the security protocols in place.

"Always request a personal visit to assess the security protocols in person."

Your data centre security checklist:

- Full compliance with safety regulations including fire exits
- Physical security with protection of power, networks and cables
- Video surveillance and motion detectors, staff badges, 'mantrap' entrances and security guards
- Locked racks or options for secure cages and suites
- Intrusion detection and prevention systems with immediate alerts to staff
- Up to date security audits and certificates including ISO, ISMS and PCI DSS

A final consideration around compliance is the environment. Data Centres consume incredible amounts of energy, so ask to learn more about their energy saving activity and green credentials to understand how together you could help build a sustainable future. Enquire about the cooling systems, lighting facilities, and even their Power Usage Effectiveness (PUE) and how this is monitored, to get a greater understanding of the energy conservation processes in place.

A Data Centre provider with real green credentials can also help you achieve your ISO14001 compliance and to help reduce your own carbon footprint.

5. Flexibility and Scalability

As your business needs evolve over time, you will need a Data Centre provider who can change with you. Therefore, it is vital to find a flexible Data Centre provider who can keep up with your expansion requirements and grow with you from project to project.

Data Centre operators who offer colocation as well as dedicated servers and custom cloud solutions can be a good option for most companies. By offering a selection of different services, they will be able to custom tailor solutions and accommodate your various business requirements – from colocation and cloud storage to a dedicated server for production, or private cloud for your development needs.

"It's not uncommon for companies to use several different environments to run their business."

And as your business develops over time, you'll need to ensure that your Data Centre is able to meet your long-term business plans, for at least several years following your selection. Find out what flexible hosting plans they offer, so you have the ability to seamlessly scale up - or down - based on your business situation and needs. Check to see if you need to reserve adjacent rack space, or additional power for your existing racks before it is allocated to other clients. Data Centres operate closely managed power budgets so it's important you are up-front with your potential power requirements and confirm that your potential future plans will have sufficient power available to them later.

Physical Data Centre buildings rarely scale, but they must facilitate scaling in power and storage capacity to evolve with your IT and business objectives over the duration of the contract. Take a moment to consider how much space and power you could potentially require as your business evolves, to ensure your Data Centre provider can meet those future needs. Identify if there is any scope for growth, by establishing if they have any future expansion plans, if there is physical space to expand in terms of site development or footprint, and if they could provide additional resource, power and connectivity at short notice.

"Don't hinder your business by choosing a Data Centre provider that can't scale with you over time."

Checklist: How scalable is your data centre partner?

- Ability to accommodate new technology with different power and cooling needs
- Ease of switching to new operational procedures or ways to meet new safety requirements
- Modularity in floor layout, electrical and mechanical design to adapt to market requirements
- Availability of physical space to increase footprint on site as your business evolves

With technology rapidly evolving, we understand it is hard to exactly pinpoint where your business will be in three, five- or 10-years' time. Choosing a Data Centre partner provider who can evolve to meet the ever-changing IT landscape with additional rack space, tailored made colocation services and bespoke offerings as well as one who can offer opportunities to expand both power and space, with flexible terms to meet your business as it grows, is a good place to start.

6. Service and Support

Service and support remain important aspects to consider when assessing your Data Centre requirements.

Despite more and more Data Centre facilities increasingly turning to automation to keep operations running, a modern Data Centre still depends on knowledgeable, qualified and experienced professionals to keep it running at peak efficiency.

Some Data Centre providers will have skilled technicians on-site to perform small, maintenance tasks such as inspecting servers, replacing failed components and general network maintenance for you. Check to see if this is available 24/7 and whether it is free of charge. This is a really valuable service, as you don't need to send your own IT staff to handle these menial tasks, so it's definitely worth finding out if this is available at your chosen Data Centre.

> "Does the Data Centre have access to experienced personnel and 24/7 on-site support?"

And if something does go wrong at your Data Centre, you will want to be reassured in the knowledge that IT experts are available, on-site – as opposed to outsourced – to immediately troubleshoot and fix any issues, ensuring that your key services do not go offline. It's also worth checking out if your Data Centre partner has more senior technical engineers and design consultants available, just in case something urgent needs to be addressed at a level which you are unable to deal with adequately in-house.

Besides offering skilled technical engineers to address emergencies, find out what day-to-day support, technical consultancy services and expertise are available in-house; to cover any eventuality. Such as assistance with major investigations or in-depth trouble shooting, to ensure your systems run at maximum capacity, all day, every day. Or sometimes simply to unbox and rack new equipment which you have had shipped to site. Preconfiguring remote access, or making a remote console session available to your own engineers so they can bring new equipment online can completely negate the need for costly site visits. It also improves productivity by saving lost travel time and allowing multiple remote parties to work on new hardware in parallel.

7. Reputation and History

Last but by no means least, are reputation and operational history.

With all the security, skills, power and location considerations to bear in mind when reviewing Data Centres, taking stock of a Data Centre's actual reputation often gets forgotten.

Just like any other purchase you would make, do your research to ascertain the reputation of the Data Centre you are looking to partner with.

So, where do you start? Of course, no Data Centre provider will be absolutely perfect, but take the time to read any customer testimonials and success stories, as well as obtaining feedback from other clients – don't hesitate to contact them – to get their impressions and gain a clear and unbiased understanding how the Data Centre handles any particular issues.

It is always worth looking over any available service status updates, RFOs and related materials which are publicly available. Carefully checking through a provider's status page history can reveal how they handle both maintenance events and unplanned faults. Check to see if their communication with their customer base efficient and timely, see how they handle faults with infrastructure or 3rd party providers. Make sure that this information would be adequate for you to provide to your clients in the event that services are impacted in the future.

You should also take time to evaluate the experience of your potential Data Centre – do they currently work with similar organisations to you, in terms of size, industry, location, infrastructure, data load, uptime requirements, and more, to establish if they can offer a good fit with your own business operations and objectives.

Finding the perfect Data Centre partner: The takeaway

The explosion of Cloud and edge computing, along with developments in colocation and hosting services, have significantly changed the traditional Data Centre remit. Combined with advances in cooling and power, along with increasing investments in AI, IoT and 5G applications, many Data Centres have had to adapt fast to keep up in these technologically progressive times.

As we know from our own customers' feedback, it's not simply about location, location, location any more.

From security, scalability and network connectivity to on-site support and cooling facilities, selecting a Data Centre that meets your specific needs is an extremely important decision for your company. As presented in this document; it should not be a speedy, overnight decision based simply on immediate needs.

It's a process that needs some investment in time, but with some careful research, it is possible to find an optimal Data Centre solution with flexible packages to support and grow with your business.

The data centre evaluation process: Take time

- **To evaluate** the expertise and the experience offered by your list of potential Data Centre providers
- **To review** your own requirements – today and for the future - so you can both scale smoothly together
- **To talk** to customers, partners and staff to establish key business practices and packages
- **To assess** the technology, networks, resilience and security designed to protect you and your data
- **To visit** – book a personal tour of the on-site facilities so you can see it all for yourself

About Custodian

Custodian provide world class colocation, connectivity and cloud services from award-winning Data Centre facilities in Kent. Resilience is built into Custodian's core. Diverse power, cooling and connectivity drives Custodian's 100% power and connectivity uptime record.

Ideally situated 30 minutes south east of London, and just 20 minutes from the M25, the Custodian Data Centre is located outside of high-risk zones but still within easy reach of London and Kent's surrounding areas.

Renowned for fanatical support, service and technical expertise, they supply data centre services to over 300 UK businesses across a number of sectors. Custodian's continued goal is to support their customers to grow their businesses by providing exceptional service and the technology they need, when they need it.

Custodian Data Centres: Your Data Centre,
Your Partner, Your team.

CUSTODIAN
DATA CENTRES

Find out more & book a tour

T: 01622 230382 E: info@CustodianDC.com W: www.CustodianDC.com