

Case Study



# How EkkoSense helped Telehouse to unlock a carbon reduction of almost 750 tonnes of CO<sub>2</sub> emissions across its London Docklands data centres

Deploying EkkoSense AI data centre optimisation software results in a reduction of 15% cooling energy usage at the Telehouse North facility



## The EkkoSense® Effect

**100%**  
Thermal Compliance

**750**  
Tonnes CO<sub>2</sub> Saved

**15%**  
Cooling Energy Saved



**Today's data centre service providers are under increasing pressure to support rising digital and AI workloads. At the same time they are also tasked with delivering carbon savings to help meet corporate net zero targets.**

**By pursuing a software-enabled, AI-powered approach to performance optimisation, Telehouse, EkkoSense and CBRE have delivered real-time operational visibility to help Telehouse secure a carbon reduction of almost 750 tonnes of CO<sub>2</sub> across its London Docklands data centres.**

### Leading colocation data centre provider

Telehouse is a world-leading secure, resilient and carrier-neutral data centre operator and co-location provider with over 45 sites in countries around the world, each strategically placed to offer customers maximum data centre connectivity potential.

Owned by KDDI, a Japanese Fortune 500 company and one of the top 10 telecommunications companies in the world, Telehouse has over 3,000 customers worldwide to which it upholds a 99.999% uptime service level agreement. One of Telehouse's key USPs is its unrivalled experience and expertise having first established itself in the industry since 1988.

The Telehouse Europe London Docklands campus is home to Europe's most carrier-dense data centre ecosystem, including leading internet exchanges, cloud service providers, ISPs, ASPs and much more. Telehouse North opened in 1990 and was the first purpose-built colocation data centre in Europe. Since then, the London Docklands campus has expanded to include Telehouse West, East, North Two and South.

### Sustainability at the heart of Telehouse

As an environmentally responsible business, Telehouse puts sustainability at its heart. The company strives to enable best practice operational performance across its data centre estate, concentrating resources where the most significant environmental improvements can be achieved. In addition to taking advantage of 100% renewable energy and complying with ISO standards for Environment and Energy Management, Telehouse already takes full advantage of cloud, virtualisation and innovative cooling to contribute towards efficiency. The company recognises that improving cooling efficiency is one of the most effective ways to optimise performance and secure environmental improvements. In addition to meeting environmental goals, Telehouse faces the ongoing challenge of ensuring that its data centre operations continue to support both its customers' evolving colocation and hosting requirements as well as the company's own business growth objectives.

Telehouse needed an environmental strategy to deliver against both challenges – enabling improved data centre performance while at the same time securing carbon reductions. Telehouse engaged its services partner CBRE to identify next steps for its data centre performance optimisation programme. The project goal was to secure continuous performance improvements around visibility, efficiency and resilience, with the initial phase at Telehouse North – the company's oldest facility that opened in 1990. Target project outcomes included optimising cooling performance, removing potential thermal risk, and unlocking quantifiable carbon savings to support Telehouse's corporate carbon reduction goals.

CBRE advised that Telehouse deploy the EkkoSoft Critical AI-powered data centre optimisation solution. Backed by EkkoSense's specialist cooling optimisation skills, EkkoSoft Critical was considered a smart solution to help Telehouse accelerate cooling and airflow optimisation across its UK data centres.



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### Single pane-of-glass operational visibility across Telehouse London estate

The powerful machine learning and AI-powered software works by monitoring, visualising and analysing the cooling, capacity and power performance of data centre facilities. It analyses thousands of temperature and cooling points across sites in real-time to identify exactly where levels of cooling can be fine-tuned, and dramatically increases the level of insightful data available to operations team in order to remove thermal risk and improve resilience.

“At Telehouse we constantly strive to ensure best practice data centre operations, and we find that the granular insights we get from EkkoSoft Critical helps us to gain a much clearer picture of what’s going on from a thermal perspective,” explained Paul Lewis, Senior Vice President Technical Service at Telehouse Europe. “With EkkoSoft Critical now deployed across four of our Docklands sites, our operations teams now benefit from true real-time visibility into our cooling and capacity performance – giving them the insight they need to make informed decisions when potential issues arise.”

Unrivalled levels of sensing bring new levels of accuracy and granularity to Telehouse’s data centre operations, with the EkkoSoft Critical 3D visualisation and analytics platform continuously providing advice to the operations team about adjusting cooling settings such as fan speed adjustments, cooling set points, and floor grille placements. EkkoSense’s 3D digital visualisations allow cooling and thermal performance information to be monitored and interpreted quickly – letting operations teams see exactly what’s happening across the Telehouse estate. This AI-driven visualisation helps in terms of highlighting potential anomalies and displaying suggested airflow and cooling improvements.

“With EkkoSoft Critical in place across our London Docklands estate we can track any changes in our environment in real-time, helping us to ensure continuous optimisation and the constant rightsizing of our cooling,” added Paul Lewis. “Critically, the fact that we’re optimising our data centre performance also contributes directly to the more efficient use of our data centre power.”

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Key EkkoSense innovations that distinguish the company’s software-based optimisation approach from more traditional legacy DCIM approaches include:

- **The application of machine learning analytics built right into the heart of EkkoSoft Critical** – based on PhD-level thermal expertise, data from 50m+ data points in critical facilities around the world, as well as real-time inputs from sensors deployed across an organisation’s entire estate – from Edge facilities through to the largest enterprise sites
- **Unique Cooling Advisor functionality that provides continuous tangible optimisation recommendations to deliver cooling energy savings up to 30%** – your own virtual PhD expert continually optimising your facility, and always on hand to help in-house data centre teams to deliver the next best optimisation outcome
- **The application of EkkoSense’s distinctive Cooling Zones capability that shows the real-time correlation between cooling units and IT racks to support optimisation and provide very effective redundancy and resilience testing** – providing organisations with a much higher degree of confidence in the ongoing resiliency of their cooling plant
- **A Lightweight and easy-to-manage M&E Capacity management capability** – meaning that you no longer need an army of people or huge costs to deliver an effective centralised capacity management process
- **Use of the latest Web technologies** – including gaming interfaces to provide data centre teams with the most intuitive, easy-to-use and simplest to manage monitoring and management capabilities. By creating immersive Digital Twin representations of your data centre, operations teams get to see all their current cooling, power and thermal conditions via a single, accessible 3D visualisation
- **Truly granular levels of sensing** – taking advantage of EkkoSense’s latest low-cost IoT wireless sensor technology to allow sensors to be deployed in higher numbers across the data centre right down to rack-level – making true machine learning-based analytics and real-time thermal management of critical facilities a reality. This is typically complemented by our EkkoAir vendor-agnostic cooling unit smart meter that provides real-time cooling duty information, highlights unperforming units and helps predict potential failure points before they happen

**The result is EkkoSoft Critical - an immersive, intuitive and effective M&E software platform that helps customers such as Telehouse to:**

- Become fully ASHRAE-compliant and remove thermal risk
- Identify unused cooling capacity and unlock potential capacity increases
- Directly support their green agenda & reduce carbon footprint in the quest for net zero
- Gain real-time monitoring insights from anywhere with full remote visibility
- Optimise cooling and gain energy savings
- Plan, predict and model M&E capital spending with confidence

## Unlocking significant carbon emission reductions for Telehouse

Telehouse uses 100% clean and renewable energy across all its operations. The energy is procured from certified renewable source generators such as wind, solar, biomass and hydro and the company holds the Renewable Guarantees of Origin (REGO) certificates and Guarantees of Origin (GoOs).

“We have a robust environmental, social and governance (ESG) strategy and are focused on embedding ESG best practices across our operations,” added Paul Lewis “Having EkkoSoft Critical in place clearly supports our corporate net zero goals and, since first deploying EkkoSoft Critical in Telehouse North where EkkoSense helped us to secure a 15% reduction in cooling energy usage, we have been very successful in identifying further savings and securing quantifiable carbon emission reductions.”

Following deployments in the Telehouse North, West, East and North Two data centres, EkkoSoft Critical’s optimisation recommendations have resulted in cooling energy savings and significant carbon emission reductions. “Working with EkkoSense we have already cumulatively secured almost 750 tonnes of CO<sub>2</sub> savings across the four initial Telehouse sites - contributing directly to our broader corporate sustainability and net zero goals,” said Paul. “We’re now extending the EkkoSense deployment to our state-of-the-art Telehouse South building, and look forward to securing further carbon savings as we continue our optimisation programme using EkkoSense’s AI-powered data centre optimisation platform.”

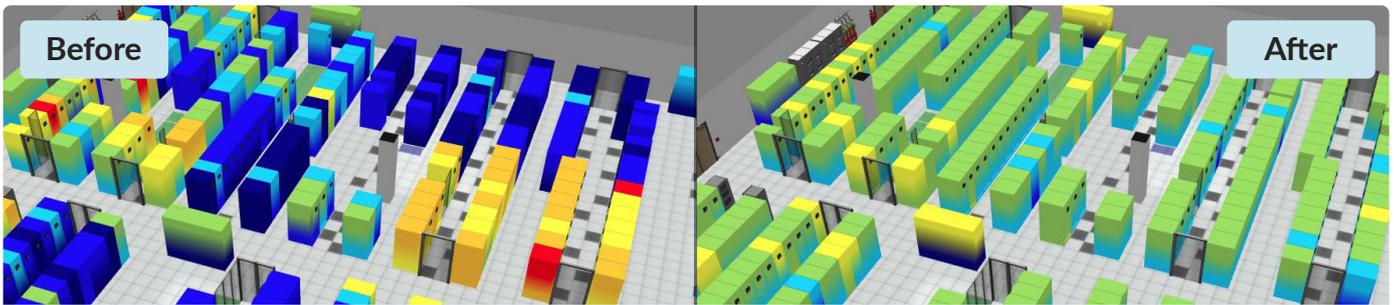
## Next steps

Optimising data centre cooling performance and realising quantifiable carbon savings with EkkoSense has been a great result for Telehouse, with continued optimisation additionally supporting the company in its ongoing net zero programme.

However, a key benefit for the Telehouse operations team has been how the EkkoSense AI-powered platform not only improves visibility into cooling and capacity performance, but also helps reduce much of the administrative burden for already busy team members.

EkkoSense has continued to update and enhance its EkkoSoft Critical platform, with key innovations including estate-wide thermal and capacity reporting and a powerful embedded ESG reporting capability that automates reporting for the EU’s CSRD and the EC’s EED directives. In addition to PUE, key ISO/IEC 30134 metrics supported include CUE (carbon usage), CER (cooling efficiency), and WUE (water usage) if water usage is being monitored on site.

“Whether it’s the introduction of new consolidated estate views that enable operations teams to navigate quickly from estate to site to floor to room, or automated ESG reporting that will allow us to deliver regular ESG and sustainability reports to thousands of customers, EkkoSense continues to add value to its data centre performance optimisation proposition,” said Paul Lewis. “And with upcoming features such as Cooling Anomaly Detection allowing us to identify M&E equipment performance anomalies before potential failure, it’s clear that EkkoSoft Critical has become a valuable part of Telehouse’s data centre management portfolio.”



EkkoSense Deployment	EkkoSense Deliverables	Benefits Achieved	ROI
<ul style="list-style-type: none"> <li>Deployed across Telehouse North, West, East, North Two, with South soon to start deployment</li> <li>Entire Telehouse London estate, presenting some 7,000 racks across North, West, East and North Two are now supported by EkkoSense under EkkoSoft Critical management</li> </ul>	<ul style="list-style-type: none"> <li>EkkoSensor wireless sensors across Telehouse Docklands site</li> <li>EkkoSoft Critical AI-powered 3D visualisation and analytics software</li> <li>EkkoAir wireless cooling duty sensors</li> <li>Data Centre Performance Optimisation Managed Service</li> </ul>	<ul style="list-style-type: none"> <li>Energy savings delivered</li> <li>Reduction in carbon emissions</li> <li>Removal of thermal risk</li> <li>Platform in place for further capacity release</li> </ul>	<ul style="list-style-type: none"> <li>c. 750 tonne reduction in CO<sub>2</sub> carbon emissions</li> <li>15% reduction in cooling energy usage across Telehouse North</li> </ul>



Bring the power of EkkoSense AI to your critical facilities



Discover more



Request your free demonstration and experience the future of data centre optimisation, today.

[www.ekkosense.com/demo](http://www.ekkosense.com/demo)

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